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U. S. NAVY TACTICAL DIGITAL SYSTEMS TACTICAL DATA SYSTEMS GLOSS--ETC(U)
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(6) U. S. NAVY TACTICAL DIGITAL SYSTEMS

TACTICAL DATA SYSTEMS GLOSSARY.

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TACTICAL DIGITAL SYSTEMS OFFICE

MAT-09Y

FOREWORD

This Glossary is published as an authoritative source for the definitions and descriptions of terms, words, and abbreviations used in Tactical Data Systems (TDS) within the Department of the Navy.

This publication is to be used as a supplement to NAVSO P-3097 (ADP Glossary), for words, terms and abbreviations unique to TDS used within the Department of the Navy and other Departments and Agencies of the Federal Government.

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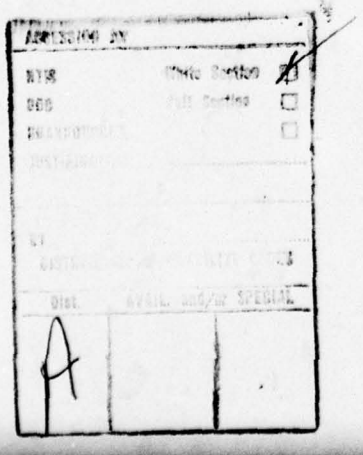

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Digital Computers	digital systems	weapons systems
Computers	electronic computers	
Data Processing Equipment	general purpose computers	
airborne computers	shipboard computers	
data processing	special purpose computers	

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This publication is to be used as a supplement to NAVSO P-3097 (ADP Glossary), for words, terms and abbreviations unique to Tactical Data Systems used within the Department of the Navy and other Departments and Agencies of the Federal Government.

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The TDS Glossary was produced using the following references as indicated by the respective code following each term.

Source	Code
User's Reference Manual For Common Program MOD X2 For Use With AN/UYK-7(V) Computer (01 Aug 73)	C
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Standard Glossary For The Joint Fleet Combat System Support Activities, Section 9 (Change 1: 8 Nov 74)	F
Tactical Digital Systems Documentation Standards SECNAVINST 3560.1 (08 Aug 75)	G
Federal Information Processing Standards Publication 30 (30 June 74)	I
Naval Material Command Notice 3960 (01 Feb 73)	N
Data Document For SSN 688 Class Central Computer Systems NAVSHIPS 0967-030-5520 Revision 1	O
Technical Terminology In The Computer Sciences By Dr. P.C. Patton (30 Aug 71)	P
Raytheon Service Company, Hyattsville, Md.	R
Standard Off-Line AN/UYK-7 Test Driver/Test Control (Feb 75)	S
CPPS For ATEP/MMS Kernel (18 Oct 74)	T
NAVSHIPS 0900-076-6010	V
Requirements For Digital Computer Program Documentation WS-8506 Revision 1 (01 Nov 71) (superceded by G above)	W

Comments or Inquiries Relative To This Document Should Be Referred to:

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A

A-LINK (F)
LINK-11. See TADIL A.

AADC (P)
All Application Digital Computer.

abort (R)
To terminate a program when a condition, hardware or software, exists from which the program or computer cannot immediately recover.

ABS (F)
Absolute coding.

absolute address (F)
An address which indicates the exact storage location where the referenced operand is to be found or stored in the actual machine code address numbering system.

absolute coding (ABS) (F)
Coding in which all addresses refer to actual machine registers and memory locations.

access time (F)
The time interval between the instant a memory or storage device requests information and the instant this information begins to be available in useful form.

ACK (F)
Acknowledge.

acknowledge (ACK) (R)
An indication of the status of data on the computer/input/output lines.

acoustic delay line (R)
Delay line using a medium providing acoustic delay; for example, mercury or quartz delay lines.

action code (F)
These codes are sent from the display equipment to the computer. Every action entry button causes an action code to be sent to the computer. These codes initiate an action (by computer) to enter a particular type of *data to the display console*, to initiate input/output data request or to cause special processing.

action entry button (F)
The buttons on the display consoles which initiate action codes when depressed. See CCAEB.

action entry panel (F)
The display console panel on which action entry buttons are located. See CCAEP.

action spot (R)
In a crt, the spot of the raster on the face of the tube used to store the digit or character.

ADC (R)
Analog-to-Digital Converter.

ADCON (F)
Analog-to-Digital Conversion.

address computation (F)
Computer operations which result in the creation or modification of the address part of instructions.

address translation (P)
The operation of translating symbolic addresses into absolute addresses.

addressable (F)
Capable of being referenced by a computer instruction.

ADP (F)
Automatic Data Processing.

ADP resources (D)
The totality of Automatic Data Processing Equipment (ADPE), software, computer programs, ADP contractual services, ADP personnel, and supplies.

ADPS (R)
Automatic Data Processing System.

AEB (F)
Action Entry Button.

AEP (F)
Action Entry Panel.

alarm (R)
An audio and/or video signal which signifies that an error has occurred, or a condition exists that is interfering or could interfere with the proper operation of a program.

alarm amplifying code (R)
Amplifying data presented in digital format describing a malfunction that has occurred. This code is presented in conjunction with an alarm.

alert
Any event or condition brought to the attention of console operators by means of a visual or audible warning device.

alert light (F)
Lighted lettering on a display console indicating an alert condition.

All Application Digital Computer (AADC) (R)
A military computer concept which requires a very high degree of modularity of hardware, firmware, and software, such that perhaps fewer than 30 standard elements, universally interconnectable, will be all that are necessary to permit assembly into a large number of cost-effective configurations for a very wide variety of applications.

allocate storage (F)
To assign storage locations or areas of computer memory storage of specific routines, constants, working storage, data, etc.

ALMON (F)
A-Link Monitor.

ALU (R)
Arithmetic and Logical Unit.

analog computer (F)
A calculating machine operating with numbers represented by directly measurable quantities, such as voltages, resistances, rotations, etc., as opposed to a digital computer which operates with numbers expressed directly as digits in a binary or other base numbering system.

analog data (F)
Data input to, or derived from, an analog computer. Analog data are usually represented by physical variables such as, voltage, resistance, and rotation. Data represented in continuous form in contrast to digital data represented in discrete form.

Analog-to-Digital (A/D) (R)
The conversion of analog signals from a voltage level to digital information.

Analog-to-Digital Converter (ADC) (R)
A device that changes physical motion or electrical voltage into digital factors.

analysis (R)
See numeric analysis, systems analysis.

analyst (R)
A person skilled in definition and development of techniques for solving problems, especially those techniques for solutions on computers.

APL (P)
A Programming Language. Refers to any implementation of Iverson's language or notation.

application module (R)
An operating system program module (segment) which contributes directly to the system mission, e.g., mathematical routines including sine, cosine, tangent, arc sine, square root, natural logarithms, and exponential functions.

architecture (R)
See system architecture.

argument (R)
(1) The key used in a search.
(2) The numbers or codes used in a tabular look-up to specify the location of a desired value or to permit the identification of a desired result.
(3) An independent variable upon whose value the the value of a function or an operation depends; for example, in the function Y, A sin BX, the X would normally be considered the argument.

ARO (F)
Auxiliary readout.

array (P)
A set of items arranged so that an ordered set of integers defines the position of each item of the array.

array processor (P)
A multiprocessor in which a large number of identical processing elements or units are controlled by the same program sequence concurrently.

artificial intelligence (R)
See heuristic program.

A/D (O)
Analog-to-Digital.

aspect angle (F)
The angle between the longitudinal axis of the target (projected) and the line-of-sight to the interceptor measured from the target (target angle).

assemble (F)
To prepare an object language program from a symbolic language program by substituting machine operation codes for symbolic operation codes and absolute or relocatable addresses for symbolic addresses.

assembly list (R)
A printed list. The by-product of an assembly procedure that lists, in logical instruction, sequence details of a routine showing the coded and symbolic notation next to the actual notations established by the assembly procedure.

assembly program (F)
A computer program which translates computer instructions written in symbolic coding into machine language instructions.

assembly routine (F)
A computer routine which assembles other routines. See assembly program.

associative memory (R)
Same as associative storage.

asynchronous (R)
(1) Pertaining to a lack of time coincidence in a set of repeated events; for example, the execution of one operation is dependent upon completion of a previous operation. See asynchronous computer, asynchronous data transmission.
(2) Events occuring independent of CPU action or state.

asynchronous computer (R)
A computer in which the performance of each operation starts as a result of a signal either that the previous operation has been completed, or that the components of the computer system required for the next operation are now available. Contrast with synchronous computer.

asynchronous data transmission (R)
In this type of data transmission,

each character consists of N information bits, preceded by a start bit and followed by a stop bit. Each bit in a data character is of equal time duration, with the exception of the stop bit, which may be of equal or greater duration. Contrast with synchronous data transmission.

Audio Visual Alarm Panel (AVAP) (F)
Provides system interface for manual threat assessment and alerts.

automated data system (I)
A set of logically related computer programs designed to accomplish specific objectives or functions.

Automatic Data Processing (ADP) (F)
The recording, filing, computing, and production of data by means of electronic computers and associated auxiliary equipment.

automatic stop (R)
The halting of a computer processing operation as the result of an error detected by built-in checking devices, or a programmed automatic stop.

auxiliary equipment (R)
Equipment not under direct control of the central processing unit of the computer.

auxiliary operation (R)
an operation performed by equipment not under continuous control of the CPU.

ARO (F)
Auxiliary readout. Synonymous with Data Readout (DRO) and digital readout in NTDS.

AVAP (F)
Audio Visual Alarm Panel.

B

B-LINK (F)
LINK-14. See TADIL B.

backing storage (P)
See secondary storage.

Backus Normal Form (BNF) (R)
A notation for the description of the syntax of phrase-structured languages. Originated by John Backus and first used by Peter Naur in the ALGOL 60 report to define the syntax of ALGOL; for example, <digit> :: # 1/2/3/4/5/6/7/8/9/0. Means that the class of symbols known as digit is defined as 1 or 2 or 3 or 4, etc.

Backus-Naur form (R)
Same as Backus normal form.

ball tab (B/T) (F)
(1) In NTDS, a small circular symbol, normally smaller than those symbols used to represent tracks and special (reference) points on the PPI.
(2) As an action, B/T is the means by which the operator can designate a position on the PPI to the computer program. The designation may require that the enable button be activated to display the ball tab symbol; the symbol is then "rolled" to the desired location by use of the trackball. This action designates a position by coordinates which are available to the computer.

BAM (F)
Binary angular measure.

BS (F)
BAMs per Second. The time rate of change of direction expressed in BAM. One BAM equals 360 degrees. See binary angular measure.

BAMS (D)
Binary angular measurement system.

base register (R)
Register containing either base address, index, or displacement from a base address for references to memory or subsequent address to be modified.

base register allocation table (BRAT) (R)
A segment of every module operating under the executive. This segment contains the contents for all task base registers to provide access to all program segments of the program module.

baseline (P)
An approved and defined point of departure for control of future changes in, or evolutionary development of, a system, equipment,

or computer program performance. A baseline is usually documented by a specification.

BASIC (R)
Beginner's All-Purpose Symbolic Instruction Codes. A simple, easy to learn, machine-independent, conversational computer language.

batch processing (R)
Processing of a group of items prepared or required for one or more related operations with no provision for unscheduled interruption.

baud (F)
The unit of modulation rate. It corresponds to a rate of one unit interval per second; for example, if the duration of the unit interval is 20 milliseconds, the modulation rate is 50 bauds.

BCD (F)
Binary coded decimal.

BCTOCT (F)
Binary Conversion To Octal.

BCW (F)
Buffer control word.

beam storage (R)
Storage units which use one or more beams of electrons or light to gain access to individual storage cells for operation, most often crt storage.

benchmark (P)
In geodesy, a point of reference from which measurements or comparisons can be made. By analogy, a benchmark program or problem is one used to compare the performance of two or more computers, or object code efficiency of two or more compilers on the same computer.

bi-oct (F)
Bi-octal format.

bi-octal format (BI-OCT) (F)
A specific format for recording data on magnetic tape or paper tape wherein two octal digits are recorded in one frame.

binary angular measure (BAM) (R)
Angular units expressed in binary measure in accord with the following example:

BAM (in binary code)	angle (in degrees)
1.0000	360
0.1000	180
0.0100	90
0.0010	45
0.0001	22.5
0.1101	292.5 (i.e., 180 + 90 + 0 + 22.5)

The granularity of BAM is limited by computer word size.

binary angular measurement system (BAMS) (R)
The angular measurement system which uses the binary angular measure (BAM) angular units. See Binary Angular Measure.

binary coded character (F)
One element of a notation system for representing alphameric characters as a fixed order of binary digits (bits).

binary coded decimal (BCD) (F)
Pertaining to a decimal notation in which the individual decimal digits are each represented by a binary code group; for example, in the 8-4-2-1 coded decimal notation, the number 23 is represented as 0010 0011. In binary notation, 23 is represented as 10111.

binary-coded octal (F)
An octal numbering system in which each octal digit is represented by a three place binary number. For example, 327 octal is binary-coded as 011 010 111.

binary digit (bit) (F)
A character used to represent one of the integers smaller than the radix two; namely zero or one. A bit is represented in a computer by the condition (set or clear) of a stage.

binary point (F)
That point in a binary number which separates the integer portion from the fractional portion, analogous to the decimal point in the decimal system. Also called radix point, which is a general term for all numbering systems.

binary search (R)
Used to find a particular item in an ordered set of items by repeatedly dividing in half the portion of the ordered set containing the item sought, or until the sought for item remains.

binding (P)
The procedure by which all symbolically represented characteristics of a program's instructions are put into a form which can be executed by the computer without further modification.

bioctal (F)
See bi-octal format.

BIPS (P)
Billions of instructions per second.

bit (P)
(1) Contraction of "binary digit".
(2) Built-In-Test.

bit pattern (R)
A combination of N binary digits to represent 2 to the N possible choices; for example, a 3-bit pattern represents 8 possible combinations.

bit string (R)
(1) A string of binary digits in which the position of each binary digit is considered as an independent unit.
(2) A one dimensional array of bits ordered by reference to the relations between adjacent bits.

BITE (O)
Built-in test equipment.

block (R)
(1) A group of computer words considered as a unit by virtue of their being stored in successive storage locations.
(2) The set of storage locations of positions in which a block of words, as defined above, is stored or recorded.
(3) A circuit assemblage which functions as a unit; for example, a circuit building block of standard design, and the logic block in a sequential circuit.
(4) The amount of LINK-14 data typed in one minute. A block is separated from the preceding and following block by four line feeds.

block chaining (R)
Associating one block of stored data with another block in order to allow an item or queue of items to occupy more than one block. Blocks may be linked by programming, but some machines do it automatically.

block length (R)
The total number of records, words, or characters contained in one block.

blocking factor (R)
The limit of data records which can be contained in a given block on magnetic tape, or magnetic disc storage.

BNF (R)
Backus Normal Form, or Backus-Naur Form.

book (R)
A particular large segment of memory most often used in virtual storage addressing.

bootstrap loader (R)
A subroutine which is capable of initiating the reading of another subroutine whose first instructions are designed to bring in the rest of the subroutine and thus initiate the total program schedule. Usually automatic and built into the hardware of the computer.

BORAM (P)
Block Oriented Random Access Memory.

BOT (R)
Beginning-Of-Tape marker.

BPI (R)
Bits Per Inch.

Branchpoint (R)
A point in a routine where one of two or more choices is selected under control of the routine.

BRAT (C)
Base register allocation table.

breakpoint (F)
A point in a routine at which special action is taken, such as stop or jump, either as a result of the insertion of a special instruction, or the setting of a console switch.

breakpoint (hardware) (R)
A feature which provides for manual control of conditional operation at breakpoints and used primarily in debugging. For example; in the AN/UYK-7, each CPU contains one 20-bit breakpoint register (CMR 60). The lower 18 bits of the register are loaded with the address of an instruction or operand at which a breakpoint is desired. For manual operation, the computer will halt when the breakpoint is reached.

breakpoint (software) (C)
The program controlled insertion of a temporary interrupt of the normal execution of a program. For example, a breakpoint may be generated by a routine which replaces an instruction in another program with an unconditional jump instruction and saves the replaced instruction. When the inserted jump instruction is executed, control is given to a desired routine to usually perform a debugging function. As a part of this function, the saved instruction may be replaced and control returned to the interrupted program.

breakpoint switch (R)
A manually operated switch which controls conditional operation at breakpoints and used primarily in debugging.

BROM (R)
Bipolar read only memory.

B/T (F)
Ball tab.

BS (F)
BAMs per second

buffer (F)
(1) Temporary storage area within a computer memory which is reserved for data input to, or output

from, the computer via the computer buffer mode.

(2) An input/output mode of a computer where data transfer takes place under computer control once the mode has been initiated by the program.

buffer completion (R)
A hardware event which recognizes when the last data item has been read into or written out of a buffer. Optionally allowed to be accompanied by the opening of another buffer or the sending of an interrupt to a designated CPU(s).

buffer control word (BCW) (F)
A computer storage location which contains data that establishes the physical storage limits of a buffer.

buffer storage (F)
Any device which temporarily stores information during transfer.

bulk memory (P)
A large word addressable or block addressable random access memory.

bus (R)
A circuit over which data or power is transmitted, often one which acts as a common connection between a number of locations.

byte (F)
A sequence of adjacent binary digits operated upon as a unit and usually shorter than a word. A subdivision of a computer instruction word consisting of a fixed number of binary digits, usually six or eight.

C

C-LINK (F)
LINK-4A. See TADIL C.

cache memory (P)
Same as cache storage.

cache storage (R)
A high-speed storage device that serves as a buffer between main storage and main processing unit. Its purpose is to effect a workable match between main storage and the processors despite a large disparity in their *access and cycle times*. Synonymous with cache memory.

call number (R,F)
(1) A group of characters identifying a subroutine, module, etc.. May contain information concerning parameters to be inserted, information to be used in program generation, or information related to the operands.
(2) A group of computer words considered as a unit which may be transferred as a unit from magnetic tape storage to computer memory, and vice versa.

calling sequence (R)
A basic set of instructions used to begin or initialize or to transfer control to a subroutine, but usually to complete the return of control after the execution of the subroutine is finished.

capacity (F)
The upper and lower limits of the numbers that may be processed in a computer register.

captured code (P)
Modifications to system software which must be changed, verified or re-validated whenever the underlying support software is updated or rereleased.

carry (R)
(1) A *signal or expression* produced as a result of arithmetic operation on one digit place of two or more numbers expressed in positional notation and transferred to next higher place for processing.
(2) A signal or expression as defined above which arises in adding when the sum of two digits in the same digit place equals or exceeds the base of the number system in use.

catenate (P)
To form a connected chain or string of characters.

cathode ray tube (CRT) (F)
A vacuum tube used as a storage or a visual display device. For example, a PPI scope.

CCAEB (F)
Computer Controlled Action Entry Button.

CCAEP (F)
Computer Controlled Action Entry Panel.

CCB (R)
Change Control Board.

CCOT (V)
Computer Channel Operability Test.

CDB (F)
Common data base.

CDBDD (W)
Common Data Base Design Document.

CDM (F)
continuous data mode.

CDR (F)
Control and Data Retrieval.

CDS (F)
Combat Direction System, Command Data System, (CANADA)

cell (R)
The storage for one unit of information, usually one character or one word.

central memory (R)
Same as primary storage.

central processing unit (CPU) (F)
Part of a computer system which contains arithmetic unit, and special register groups. Performs arithmetic operations, controls instruction processing and provides timing signals and other housekeeping operations.

central processor time available (F)
The amount of central processor time that remains unused during maximum load condition on a computer program.

certification (N)
The act of attesting, by report, letter on certificate, that the performance of an equipment or system meets prescribed performance criteria. The word carries the connotation of a guarantee.

CFAR (F)
Constant False Alarm Rate.

CFI (F)
Control Format Interface.

CFU (F)
Control Formatter Unit.

chad (R)
A piece of material removed from a paper tape, card, or other medium, when forming a hole or notch in the medium for the purpose of storing or recording data.

chadless (R)
Pertaining to cards or tape in which each chad is left fastened by about a quarter of the circumference of the

hole, usually at the leading edge. Chadless punching is useful when it is undesirable to destroy information written or printed on the cards or tape, or undesirable to produce chad.

chaining (T)
Connecting items, such as data table entries, into a single ordering (chain) irrespective of their physical locations.

chan (F)
Channel.

channel (chan) (F)
(1) A path, along which signals can be sent, for both the exchange of information between the computer and peripheral equipment, and the control of peripheral equipment by the computer.
(2) A facility for telecommunications on a system or circuit, the number of independent channels on a system or circuit, or the number of separate communication facilities that can be provided by it.
note: The term channel is also used frequently in conjunction with a figure(s) or letter(s) to identify a particular facility existing between two stations.

channel capacity (P)
The transfer rate of a computer input/output channel measured in bits, characters, bytes or words per second.

channel error indicator (F)
An indicator light on the LINK-11 terminal equipment which indicates a parity error in data being exchanged on a particular LINK-11 channel.

channel throughput (P)
The information transfer rate a device, channel, processor and operating system can support over a given period of time; currently measured in seconds or minutes (distinct from, and generally less than, channel capacity).

character (F)
One of a set of elementary signals which may include decimal digits 0 through 9, the letters A through Z, punctuation marks, and any other symbols acceptance to a computer program for reading, writing, or storing.

character fill (R)
To replace all data in a particular storage device in a group of locations by bringing all the cells to a prescribed or desired state.

characteristic overflow (C)
The condition that occurs

during computing in floating-point arithmetic when the characteristic increases from positive to negative. In the AN/UYK-7 computer, characteristic overflow occurs whenever the resultant characteristic of an operation increases past decimal +32767.

characteristic underflow (C)
The condition that occurs during computing in floating-point arithmetic when the characteristic decreases from negative to positive. In the AN/UYK-7 computer, characteristic underflow occurs whenever the resultant characteristic of an operation decreases past decimal -32767.

check read (F)
The process of checking for the correct transfer of data from one storage medium to another. See checksum.

checkpoint (R)
A point at which processing is momentarily halted to make a record of the condition of all the variables of the transaction; for example, position of input and output tapes, or state of working storage. Checkpoints are used in conjunction with a restart routine to minimize reprocessing time occasioned by functional failures.

checksum (C)
(1) A software operation usually done to assure program validity during input or output of the program. As the computer words are being buffered in or out, a running sum of their binary value is taken (may be a running sum of partial words). This value may then be compared with the last known value for the sum to assume the data's validity.
(2) A name for the sum found by the above operation.

cinching (R)
The longitudinal slippage between the layers of a magnetic tape in a tape pack when the spool is accelerated or decelerated.

circular shift (R)
Same as cyclic shift.

citation (R)
A reference statement relating to other sources of data or special notes concerning the data on punched cards.

clear (F)
To put storage or memory into a prescribed state, usually that denoting zero or blank.

clock interrupt (P)
An interrupt activated by an internal computer clock.

closed loop (F)
(1) A group of program instruc-

tions which are repeated indefinitely.
(2) A system with a feedback control so that the output modifies the input, e.g., a servo loop.

CLT (R)
Communication line terminal.

CMPTR (F)
Computer.

CMR (C)
Control Memory Register.

CMS-2 (R)
Compiler Monitor System 2.

CMS-2 compiler program (C)
A program which translates the source code of the problem-oriented or high-level CMS-2 language into machine or object code.

CMS-2M (R)
Compiler Monitor System 2M, target computer UYK-20.

CMS-2Q (R)
Compiler Monitor System 2Q, target computer USQ-20.

CMS-2Y (R)
Compiler Monitor System 2Y, target computer UYK-7.

co-resident (P)
Two programs residing in a processor's memory simultaneously.

code generator (R)
A piece of software or hardware which generates code according to a given format whenever the corresponding input is applied. For example, compiler language applied to a compiler causes the compiler to generate object code; and a hardware device for changing binary coded decimal to hollerith code.

coded program (F)
A procedure for solving a problem by means of a digital computer. The program may vary in detail from a mere outline of the procedure to an explicit list of instructions encoded in machine language.

cold start (P)
Starting a system that has no residual operating information intact. Synonymous with deadstart.

combat system (N)
The command and control, navigation, communications, weapon and other electronic systems used directly for target surveillance, target recognition, target acquisition, electronic countermeasures and weapon delivery.

Combat System Alignment Test (CSAT) (R)
An off-line test used to check the alignment of the external sensors with respect

to the reference sensor or between nonreference sensors.

Combat System Interface Test (CSIT) (R)
An off-line test used to perform static interface testing between the computer and peripheral equipment of NTDS and other systems for which a hardware interface exists e.g., NTDS/EW, NTDS/MFCS, NTDS/GFCS, etc..

Combat System Operability Test (CSOT) (F)
A program that provides data processing and printouts of selected events. The event printouts are used to support the CSOT procedures in evaluating the status of the combat weapon system during operation of the operational program.

COMM (F)
Communication.

COMM keyset (F)
Communications keyset.

Command and Control (C&C) (C^2) (F)
An arrangement of personnel, facilities, and the means for information acquisition, processing and dissemination employed by a commander in planning, directing, and controlling operations.

Command and Decision (C&D) (F)
See command and control.

command chain (C)
A group of IOC instructions to be executed by an IOC to control a particular I/O function.

comment (R)
An expression which explains or identifies a particular step in a routine, but has no effect on the operation of the computer in performing the instructions of the routine.

common data (T)
Data sets accessible by more than one module. Command data sets are linked to accessing program modules by the executive program.

CDB (R)
Common Data Base. Refers to the portion of software which contains data, procedures and parameters that can be referenced by all modules.

common service routines (T)
Routines commonly used by more than one module. These routines operate in the task state and can be used concurrently, if reentrant, by more than one application module.

compare (R)
To examine the representation of a quantity, or data, to determine whether that particular quantity is higher, equal to, or lower than another quantity.

comparing (R)
A control technique which permits data fields to be machine-checked against each other to prove the accuracy of machine merging, coding, reproduction, or record selection.

compatibility (R)
Systems for tactical C&C and communications are compatible with one another when necessary information can be exchanged at appropriate levels of command directly and in usable form. Equipments are compatible with one another if the signals exchanged between them and if the equipments or systems being interconnected possess comparable performance characteristics.

compile-time parameter (R)
A constant value to be set before the applicable program is compiled.

compiler (F)
A compiler is a program which translates a high-level source program into the equivalent machine language object program for a given computer.

Compiler Monitor System 2 (CMS-2) (R)
A computer program language which may be used to produce machine code instructions for a variety of computers.

Compiler Monitor System 2M (CMS-2M) (R)
Identifies that compiler which accepts CMS-2 statements to produce object code for a AN/UYK-20 computer.

Compiler Monitor System 2Q (CMS-2Q) (R)
Identifies that compiler which accepts CMS-2 statements, CS-1 statements or assembly language statements, and then produces object code for a specified target machine; for example, CP-642, CP-642B, or Univac 1230.

Compiler Monitor System 2Y (CMS-2Y) (R)
Identifies that compiler which accepts CMS-2 statements to produce object code for a AN/UYK-7 computer.

Compiler System 1 (CS-1) (R)
Identifies that compiler, operating in a CP-642 or Univac 1230 computer, which accepts CS-1 statements and assembly language statements to produce object code for a CP-642 or Univac 1230 computer.

composition errors (R)
Errors that are detected as soon as the user enters the offending statement. He may immediately substitute a correct statement.

computation address (R)
A computation that produces or modifies the address portion of an instruction.

computer control systems (D)
Computer systems whose primary functions are to initiate, modify, or terminate the operation of a larger system or aggregation of equipment. Such systems may be of the embedded or ADPS variety and may, once initiated, operate with or without human intervention.

Computer Controlled Action Entry Button (CCAEB) (F)
A display console button where label, or state, is under the control of a computer program. When depressed or activated, the button provides a constant action code, regardless of state. See action entry button.

Computer Controlled Action Entry Panel (CCAEP) (F)
A display console panel containing an array of CCAEBs and fixed action buttons.

computer data (D)
A collection of data capable of being accepted, processed, or produced by a computer, such as a data base or analog/digital signal.

computer information (D)
Computer data processed to a human readable form.

computer network (R)
Applies to any system composed of one or more computers and terminals, communication transmission facilities, and specialization or general-purpose hardware to facilitate the flow of data between terminals and/or processors. Its parts consist of communication devices, the host processors, the transmission lines and a set of rules, and implemented in either hardware or software to insure the orderly flow of traffic in the network.

Computer Output Microfilm (COM) (R)
A microfilm printer that accepts output directly from a computer, thus substituting for line printer or tape output.

computer program (I)
An identifiable series of instructions or statements, in a form acceptable to a computer, prepared in order to achieve a certain result.

computer program acceptance testing (W)
Testing at the computer program level, based solely on the performance requirements specified in the computer program performance specification. This testing is used for formal qualification of the computer program and successful completion results in acceptance of the computer program by the procuring agency. This type of test shall provide a representative sample of the total operating

capability of the computer program.

computer software (R)
See software.

computer software documentation (D)
Technical data, including computer listing and printouts, in human-readable form which (1) documents the design or details of computer software, (2) explains the capabilities of the computer software, or (3) provides operating instructions for the computer software to obtain desired results from a computer.

computer system (D)
An interacting assembly of computer equipment together with computer software.

computer system documentation (D)
Information which documents the technical details of the computer system. Documentation includes, but is not limited to equipment design specifications, engineering drawings, operators manuals, technical orders, computer software specifications, programming and user manuals, flow charts, listings of computer programs, and interface specifications.

computer system outputs (D)
Computer information, control signals, or computer data transferred to any device or medium external to the computer system.

computer system resources (D)
The totality of computer equipment, computer programs, computer data, associated documentation, contractual services, personnel and supplies.

concatenate (P)
See catenate.

concentrator (R)
A device used to feed the signals from several data terminals into a single transmission line for input to a computer and vice versa.

Condition 1 Operational Program (F)
Identical to Full Capability (FC) programs. Those programs that provide maximum operational capability for readiness condition 1 and require the full capability of the hardware.

Condition 1 Training Program (F)
Basically, the Condition 1 program modified to provide realistic simulated inputs and a training supervisor mode of console operation. Used to train personnel when live (real) inputs are not available.

Condition 3 Operational Program (R)
Identical to Reduced Capability (RC) programs. For programs that provide limited operational capability and require less than the full capability of the hardware system. These programs provide the highest possible degree of automated capability for situations where portions of the hardware

system are not available due to casualty, preventive maintenance or priority off-line use.

conditional (R)
Subject to various constraints. For example, the result of a comparison made during program processing or a result subject to human intervention.

conditional breakpoint (R)
A software breakpoint at which processing may be continued as coded if desired conditions are satisfied. See breakpoint.

conjunctive search (R)
A search defined in terms of a logical product, in contrast to a disjunctive form or logical sum.

console alert (F)
See Alert (1).

content addressed memory (R)
Same as associative storage.

content addressed storage (R)
Same as associative storage.

continuous data mode (CDM) (C)
A hardware feature of many navy computers in which the input/output controller allows for automatic reinitiation of input/output buffers. For example, in the AN/UYK-7 computer, reinitiation of buffers is provided by software through the IOC's execution of non-buffered commands.

control command program (R)
A program that handles all commands addressed to the system from input consoles.

Control Formatting Unit (CFU) computer (F)
The CFU computer is a general purpose, digital computer operated under internal control with external communication capabilities (NTDS unit computer, FCS unit computer, keyset central multiplexer, magnetic tape, paper tape, teletypewriter, and the data display group). Its primary function is to provide interaction between NTDS and all units of the fire control data group.

control memory (R)
Same as control storage.

Control Memory Register (CMR) (C)
(1) Any addressable register, including the accumulators, index register, and base registers for both the task state and interrupt state, and the breakpoint register, active status register, designator storage words and initial condition words for the interrupt state.
(2) Within an IOC, any register needed for buffer control of an external interrupt, external function, output data or input data for up to 16 I/O channels.

control storage (R)
(1) The storage area for microprograms in a microprogrammed computer.
(2) A high-speed memory containing the control registers of a processor.
(3) Synonymous with control memory.

conversational (P)
A term pertaining to the instantaneous interchange of responses between the user and the computing system.

converter (R)
A device which converts representation of information or which permits changing the method for data processing from one form to another. For example, a unit which accepts information from punch cards and records the information on magnetic tape, possibly including editing facilities.

core (F)
Used loosely to denote computer memory in general. Specifically, refers to a storage device in which binary data is represented by the direction of magnetization in each unit of an array of magnetic material. Usually in the shape of torroidal rings but also in other forms such as wraps on bobbins. See multiple aperture cord.

core capacity (F)
The total number of programmable memory locations, usually in words, in a given digital processor configuration.

core memory (T)
Memory composed of magnetic cores.

core resident (R)
Used to denote program instructions or data which resides in core memory at all times during system operation.

core rope (F)
A program permanently stored in a computer which permits loading the main program into core from a peripheral device.

couple (P)
To connect two processing units together by means of a channel selector switch.

CPDS (W)
Computer Program Design Specification.

CPM (R)
Cards per minute, critical path method.

CPOM (W)
Computer Program Operator's Manual.

CPP (W)
Computer Program Package.

CPPS (W)
Computer Program Performance Specification.

CPTPL (W)
Computer Program Test Plan.

CPTPR (W)
Computer Program Test Procedures.

CPU monitor clock (R)
The contents of this register are decremented by one, approximately every millisecond. When the clock count has been reduced to zero, an interrupt is generated. For example, within each CPU of the AN/UYK-7 computer a 16-bit register that when set with a nonnegative value will count down at a rate of 1024 counts per second. Upon reaching a negative value, it will stop and generate a class II interrupt within the CPU containing the monitor clock.

cross assembler (R)
A symbolic language translator that operates on one type of computer to provide machine code for another type of computer.

cross talk (R)
(1) In information storage and retrieval, the obtaining of undesirable information from a file caused by interrelating elements of the keys or descriptors used in the search.
(2) Unwanted signals in a channel which originate from one or more other channels in the same communication system.

CRT (C)
An acronym for an electronic display device. CRT is often used in programming jargon to indicate an alphanumeric display device using a cathode ray tube.

CS-1 (R)
Compiler System 1.

CS-4 (P)
An extensible programming language designed for AADC and proposed as a successor to CMS-2.

CSAT (F)
Combat System Alignment Test.

CSDD (W)
Computer Subprogram Design Document.

CSIT (F)
Combat System Interface Test.

CSM (G)
Command and Staff Manual.

CSOT (F)
Combat System Operability Test.

cursor (C)
A displayable character on a display screen to serve the following purposes:
(1) To indicate the position on the display where the next character from the keyboard or from a computer output data buffer will be

displayed, (2) to indicate the position on the display at which an editing function is performed.

cybernetics (R)
Technology involved in the comparative study of the control and intracommunication of information-handling machines and nervous systems of animals and man to understand and improve communications.

cycle (F)
(1) One complete positive and one complete negative alternation of a current or voltage. Synonomous with hertz.
(2) The period of time required by the teletypewriter to type (one time only) all enabled status and position data transmitted on LINK-14.

cycle stealing (P)
(1) The deferral of an operation at the machine cycle level in preference to another operation of higher priority. Normally, this refers to stealing processor instruction execution cycles so memory references can be made.
(2) A process where an input/output channel or other external unit may force a pause in processing while one or more memory cycles are taken for data transmission or control.

cycle time (R)
The interval between the request for and the delivery of information from a storage unit or device.

cyclic shift (R)
A shift in which the data moved out of one end of the storing register are reentered into the other end, as in a closed loop. Synonymous with circular shift, end-around shift, logical shift, nonarithmetic shift, and ring shift.

D

DACON (F)
Digital to analog conversion.

DART (R)
Data analysis recording tape.

data age (R)
The length of time a data item has been in storage without update.

data analysis recording tape (DART) (R)
A magnetic tape used for recording program, system and operator data as required for subsequent use in reconstruction of system performance.

data base schema (P)
The overall structure of a data base, as distinct from sub-schema or component or lower level structures.

data definition language (P)
A language used to define the structure of a data base independent of the program that accesses or updates the data base.

data design (F)
Data designs specify facts concerning data to be processed and the format in which the data is to be ordered during its processing by the compiler. The data design concept can be considered as a sophisticated address allocation system from which the compiler can determine data arrangements during the compiling process.

data design Mapping Program (MAP) (R)
Automated graphic presentation of program data segments.

data display consoles (R)
Those consoles which provide an operator with symbolic and/or alphanumeric display of system data and with the means of entering data into the computer system.

data exchange auxiliary console (DEAC) (C)
A peripheral device that provides paper tape, magnetic tape, and teletype keyboard and printer functions over a single I/O channel. The DEAC may be duplexed and may optionally contain an ICKCMX hardware module.

data extraction (R)
The process which provides for output of significant data to digital storage for subsequent use in reconstruction of system performance.

data field (P)
(1) Originally, a group of adjacent columns of a punched card allocated to holding a specific type of information.
(2) Later, a partial computer word where one word contained more than one field.

data flow (P)
The logical flow or progress of data throughout an information system.

data input console (F)
See data display consoles.

data link (F)
(1) A communications network utilizing radio or land-line communications for the purpose of passing digital coded information.
(2) Automatic transmission of information in digital form via electronic equipment.

data mile (R)
A linear unit of measurement equal to 2,000 yards equivalent to 1 radar mile.

data protection (R)
Same as storage protection.

data readout (DRO) (R)
Normally, a secondary display device which is integral to a data display console and used to provide alphanumeric information amplifying a situation displayed on the console crt. Not all consoles are provided with a DRO.

data reduction (F)
The transformation of masses of raw data into useful, ordered or simplified information.

data set (P)
A named collection of records.

data standard (R)
A term used to refer collectively to a standard data element, its data use identifier(s), data items and data abbreviations, as well as data codes and their characteristics.

data structure (P)
(1) A set of rules and constraints which show the relationships that exist between individual pieces of data.
(2) The schema describing the logical organization of a data base.

data terminal equipment (R)
The modem, data sink, data source, etc., at either end of a data communication channel, line, station, or link.

data transfer rate (R)
A particular rate at which data is transmitted through a channel but measured during the time in which data is actually being transmitted. For example, tape transfer rates are measured in terms of character per second, discounting gaps between blocks, words, etc.

data transmission (R)
The sending of data from one part of a system to another.

data transmission equipment (R)
The communications equipment used in direct support of data processing equipment.

DBD (G)
Data Base Design.

DBMS (P)
Data Base Management System.

DD (O)
Demand digital.

DDCS (R)
Digital Data Communications System.

DDEU (F)
Digital data entry unit.

DDI (F)
Digital display indicator.

DEAC (F)
Data entry auxiliary console, data exchange auxiliary console.

debugging aids (R)
Routines for aid to the programmer in checking out a particular program by furnishing dynamic information such as the contents of memory areas, program flow of executing range of data units, etc.

declarative statement (R)
Instructions in symbolic coding, or a system used to define and designate areas, constraints, and symbols.

decrement (R)
(1) A quantity by which a variable is decreased.
(2) A specific part of an instruction word in some binary computers. Also, a set of digits.

dedicated module (C)
In a multiple processor computer, a dedicated module is a program module that can be executed by one processor.

dedicated software executive (P)
A software executive that has a processor assigned to run it such that the execution cannot be run on any other processor.

deferred entrance (C)
For program modules operating under the common control module executive, the deferred entrance is the module entrance that is designed for processing tasks that are not time dependent and that may require a large amount of processing time, such as test data reduction. Deferred entrance requests are honored only

after all priority, message and periodic entrance requests have been honored. In addition, processing using this entrance is automatically timesliced by the standard executive in order to return control to higher priority requests.

degradation (R)
The operational condition in which the system continues to operate but at reduced levels of service. Such circumstances are usually caused by unavailability of various equipment units or subsystems. See fail-soft, reduced capability.

degree of multiprogramming (R)
Refers to the number of transactions handled in parallel by a system involved in a multi-program.

DEK (F)
Data entry keyboard.

delay (R)
(1) Time after the close of a reporting period before information pertaining to that period becomes available. Delay may also cover the time to process data and to report.
(2) Retardation of the flow of information in a channel for a finite period of time.

delay counter (R)
In the unit of some computer, a counter that can delay a program long enough for the completion of an operation.

delta character or position (C)
This character is one of the keyboard input display characters used to indicate a position on the screen of the MCC and other character display units. For example, in a line of alphanumeric coding, the delta character indicates the left end of a message ready to be transmitted to the computer. The cursor indicates the right end of this message.

demand (R)
An I/O coding technique in which a read or write order is initiated as the need to read a new block or write new block of data occurs.

demultiplexing (R)
The dividing of one or more information streams into a larger number of streams. Contrast with multiplexing.

dense binary code (R)
A code in which all possible states of the binary code are used.

deque (P)
A double ended queue such that elements may be added to or removed from front or rear.

designator (C)
As used in describing the

format of an instruction or a control word, a designator is a bit field that is interpreted by the hardware to help identify the specific function to be performed.

diagnostics program (R)
A program used by the supervisory program or the computer operator to check for and locate malfunctions, errors, and/or faulty components.

dichotomizing search (R)
A search in which the series of items is divided into two parts, one of which is rejected; the process is repeated on the unrejected part until the desired item is found or all possibilities exhausted. This process usually depends upon the presence of a known sequence in the series of items.

digit (R)
One of the N symbols of integral value, ranging from 0 to N-1 inclusive, in a system of numbering with radix N; for example, the ten digits 0,1,2,3,4,5,6,7,8,9 in the decimal system; 0,1 in the binary system.

digital clock (R)
A clock which provides output in digital representation. In a synchronous computer, such clocks are the source of the equally spaced pulses which are required for synchronizing computer operations.

Digital Data Communications System (DDCS) (R)
The collection of communications equipment and interfacing devices which provides computer to computer exchange of data.

digital data link (R)
A digital data communications system which provides real-time exchange of data; e.g., LINK-11 or LINK-4A.

digital weapons control system (W)
The total collection of equipments, including the computer system that provides the capability to meet the defined system operational requirements.

direct code (R)
A code that specifies the use of actual computer command and address configurations.

direct instruction (R)
An instruction which contains an operand for the operation specified by the instruction.

directory (R)
File containing the layout for each field of the des-

cribed record. A directory describes the layout of a record within a file.

disjunctive search (R)
A search defined in terms of a logical sum, i.e., disjunctive form, in contrast to a conjunctive or logical product.

disk station (R)
A peripheral storage subsystem consisting of disk storage units and their control devices.

disk storage (F)
A storage device which uses magnetic recording on flat rotating disks.

display (F)
A visual presentation of data, such as a projection on a screen, generation on a cathode ray tube or a printout. The orderly presentation of information by communications-electronic means.

display consoles (F)
See data display consoles.

divide check (R)
An indicator which denotes that an invalid division has been attempted or has occurred.

DM (F)
Data mile.

DMR (C)
Dynamic module replacement.

double precision arithmetic (R)
The feature of a computer which allows two words to be used to accommodate a quantity; this avoids the cutoff of a lesser significant digit.

double punch (R)
Refers to more than one numeric punch in any one column of a hollerith card.

DPRO (F)
Digital projection readout.

DPS (F)
Digital Plotting System.

DRO (F)
Data readout.

drop-in (R)
An accidental or unwanted appearance of bits.

DRR (F,R)
Data report reliability (LINK-11), data recording and reduction.

drum latency time (R)
The delay or latency time on drum-memory units occurs while waiting for a given datum to appear beneath the read-write head. This time may be minimized by organizational procedures, i.e., by programming the next address of the datum to be read or written as a function of the last position of the read/write head, plus

the elapsed time for the processing before the next read/write instruction.

drum storage (F)
A storage device which used magnetic recording on a rotating cylinder. A type of addressable storage associated with some computers.

D/A (R)
Digital-to-analog.

DSR (F)
Dynamic system reconfiguration.

duplex (R)
In communications, pertaining to a simultaneous two-way independent transmission in both directions. Contrast with half duplex, simplex, but synonymous with full duplex.

duplex channel (F)
A channel providing simultaneous transmission in both directions.

duty cycle (C)
For any recurrent function, the duty cycle is the ratio of the time elapsed for completing a function, compared to the time elapsed between successive reinitiations of the function.

dynamic memory (R)
Same as dynamic storage.

dynamic module replacement (DMR) (R)
A capability which allows dynamic reconfiguration of the system to adapt to a changing environment while avoiding disruption of system performance presentation. Modules critical to program operation reside in core at all times and are defined as resident modules. The modules which provide additional capabilities for particular situations are transient modules and are available on disk or magnetic tape to be added to the program by operator or software action.

dynamic relocation (C)
The process of moving program segments within or into memory without disrupting the operation of the system.

dynamic stop (R)
A specific stop in a loop which consists of a single jump instruction which effects a jump to itself.

dynamic storage (R)
The method of using a storage medium (core, disc, drum, etc.) for storing of information (program instructions or data) in a manner that permits the information to move or vary with time.

dynamic storage allocation (R)
Programs are compiled to start at address zero. Cir-

cuitry then adds the contents of a base address register to that address to form the effective address.

dynamic system reconfiguration (DSR) (F)
The on-line modification of a hardware or software system through the use of manual or automated actions.

E

EAT (O)
End around test.

ECMU (F)
Extended computer memory unit.

ECP (R)
Engineering Change Proposal.

ECS (P)
Extended core storage.

EDC (F)
Error detection and correction code, error detection code.

EDTC (F)
Error detection and turning code.

EF (O)
External function.

EIB (R)
Electronics Information Bulletin.

electronic accounting machines (R)
The set of conventional punch-card equipment including sorters, collectors and tabulators.

embedded computer systems (D)
Computer systems that are physically incorporated into a larger system whose primary function is not data processing and are integral to such a larger system from a design, procurement, or operations viewpoint.

empirical (R)
Pertains to a statement, formula or data derived from observation or experiment.

encoder (R)
Device capable of translating from one method of expression to another method of expression; translating a message into a series of binary digits.

end-around shift (R)
Same as cyclic shift.

End-Of-File (EOF) (R)
Termination or the point of completion of a quantity of data. EOF marks are used to indicate this point.

End-Of-Job (EOJ) (R)
Point of completion of a computer program, indicated by the EOJ control card which returns control to the monitor.

End-Of-Message (EOM) (R)
The specific set of characters that indicates the termination of a message.

Engineering Change Proposal (ECP) (C)
A term which includes both a proposed engineering change and the documentation by

which the change is described and suggested.

entry time (R)
The time when control is transferred from the supervisory to the application program.

EOF (F)
End-Of-File.

EOJ (R)
End-Of-Job.

EOM (F)
End-Of-Message.

EPI (F)
Electronic position indicator.

equipment compatibility (R)
Characteristic of computers by which one computer may accept and process data prepared by another without conversion or code modification.

error detection and correction code (EDC) (F)
A code in which each data signal conforms to the specific rules of construction so that departures from this construction in the received signals can be automatically detected and sometimes corrected.

error detection and tuning code (EDTC) (F)
A repetitive series of characters (RY) used to tune and monitor the quality of LINK-14 signals.

error handler (R)
A part of the executive. This routine provides a common entry point for all hardware and software detected errors. This routine builds an error indication packet from information available in the ISC, active status register, and other input parameters and passes this packet to a common recovery routine. In situations where the error is determined to be noncritical, the error handler returns control to the interrupted program with an appropriate error indicator.

error message (R)
A message developed by a program to designate an error.

error rate (F)
The total amount of information in error divided by the total amount of information received.

ESA (F)
Externally specified addressing.

ESI (F)
Externally specified index.

ESM (R)
Electronic support measures.

ESR (F)
Executive service request.

EXEC (R)
Executive.

execute (R)
To interpret a machine instruc-

tion and perform the indicated operation(s) on the operand(s).

executive (F)
(1) A program that regulates the use of CPU(s) between application programs; additionally, it may control program initiation of I/O and may provide for communication between programs and other computers.
(2) The executive program coordinates and controls the execution of all other programs in the operational system.
(3) See dedicated software executive, floating software executive.

Executive Operating System (EXOS) (R)
See executive.

executive service request (ESR) (C)
A request to the executive by a task state program for an interrupt state routine provided by the executive services include executive functions, such as placing a module on the scheduling list, and execution of privileged instructions, such as initiate I/O.

executive system (P)
A software system that controls the allocation of system resources to a sequence of tasks or jobs awaiting execution and monitors their use of these resources during execution.

exit (R)
A way of momentarily interrupting or leaving a repeated cycle of operations in a program.

EXOS (R)
Executive Operating System.

expression (R)
Any symbol or group of symbols representing a variable, or group of variables, possibly combined by symbols representing operators to a set of definitions and rules.

extensible language (P)
A high level programming language with a macro feature for defining extended capability and syntax features.

external function (EF) (R)
A control signal sent by the CPU or IOC (as applicable) to a subsystem which identifies the word on the output data lines as a function rather than a data word.

external interrupt (T)
A signal sent by a peripheral device over an I/O channel to report the status of that device. Contrast with internal interrupt.

externally specified addressing (ESA) (F)
A feature of certain computers which enables a data word

to be stored or read from an address directly specified by an external device.

externally specified index (ESI) (F)
A feature of certain computers which allows transfer of data words indirectly specified by an external device; that is, the external device specifies the address of the buffer control words for this particular transfer.

F

facility (P)
A computer center, including the site, hardware, software and staff together with remote preipherals or terminals.

failsafe (P)
A system with failsafe capability is able to carry out its essential mission in spite of failure of any component or subsystem or any number of components or subsystems.

failsoft (P)
A system with failsoft capability is able to continue operation in a degraded mode in the face of failure of one or more components or subsystems. See degradation, reduced capability.

fast fourier transform (R)
The fast fourier transform is simply an efficient method for computing the discrete fourier transform which is the numerical counterpart of the continuous fourier transform. For the more general case, there is a reduction in computation from N**2 operations to (N/2) (log base 2(N)) operations.

fault-tolerant (P)
A system designed to operate and carry out its mission in spite of component and subsystem faults.

FC program (F)
Full Capability program.

FCDSSA (R)
Fleet Combat Direction Systems Support Activity.

FCO (R)
Field Change Order.

FCP (R)
Field Change Proposal.

Fibonacci Search (R)
A search based on dichotomy such that in each step the original set or remaining subset is subdivided in accordance with successive smaller numbers in specific Fibonacci series. When the number of items is such that a set is not equal to a Fibonacci number, the number of items in the set is assumed to equal the next higher Fibonacci number.

FILO (P)
First-in-last-out.

firmware (R)
A microinstruction program residing in the read only memory of a micro-processor. In a given computer, firmware is changed by replacement of the microprocessor circuit card with one containing the desired microprogram.

The microinstructions used in firmware are executed much faster than the macroinstructions used in software. Contrast with hardware, software.

fixed-point scaling (C)
Fixed point scaling is a convention established to maintain the location of the radix point in numbers represented in computer words which are subject to fixed point arithmetic operations.

float code (P)
A program or part of a program organized such that it will properly execute regardless of the memory address at which it is currently allocated.

floating software executive (P)
A software executive that can be run on one and only one processor at a time, but can be run on any processor in the system.

floating-point number (C)
A representation for a number within a digital computer by two parts called the mantissa and the characteristic, as used in floating-point arithmetic. The mantissa expresses the number's significant digits according to a fixed format. The characteristic expresses the exponent to raise the base (usually 2) so that when this power is multiplied by the mantissa, the result is the original number.

floating-point shift (R)
A shift in 4-bit increments, performed on floating-point numbers.

flying spot scanner (R)
In optical character recognition, a device employing a moving spot of light to scan a sample space, the intensity of the transmitted or reflected light being sensed by a photoelectric transducer.

FOD (G)
Function Operational Design.

foreground processing (R)
Programs with critical response times are given priority by the executive by being placed in a higher priority queue. Contrast with background processing.

formal language (P)
A language is a set of valid or admissible strings and the meanings or interpretations associated with these strings.

forward error correction (P)
A scheme whereby redundant information is transmitted with the data in order to effect correction without retransmission.

FOS (G)
Function Operational Specification.

Full Capability Program
(FC Program) (F)
Programs designed to use

either the full number of digital processors and memory units or a lesser configuration which will allow instantaneous availability of all functional capabilities of the system.

function (F)
A part of a total program that performs a series of closely related tasks in the achievement of a particular goal.

function code (C)
The portion of the machine instruction word that specifies to the CPUs control section which sequence of control signals it must generate for the instruction's execution.

function identifier (C)
A mnemonic code to indicate a function to be performed, such as those defined for the debug module.

G

global (P)
An entity that may be used by any elements of a system.

graceful degradation (P)
See failsoft.

grammar (P)
The grammar of a language is a set of rules that determine which finite sequences of symbols (strings) are legitimate sentences in the language.

graphical data processing (P)
Computer analysis of or creation of information in line drawing form.

H

handshaking (P)
Exchange of a predetermined signal for purposes of control when a connection is established between two data sets.

hardwired (T)
Computer logic built by engineering design directly into a component of the computer. Hardwired logic may not be modified by programming action.

Hertz (Hz) (F)
One Hz equals 1 cycle per second.

heuristic program (P)
A computer program which is able to modify its process based on its past performance, or a learning program. Synonymous with artificial intelligence.

hierarchy (P)
The structural determination of precedence by definition.

high level language (P)
A programming language that is intended to be machine independent and more easily understood by humans than machine language.

hit (R)
A match made when a file is searched for specific data items; a find made when the label of a stored record matched a search key.

housekeeping task (P)
A general system servicing task that must be run periodically to ensure system performance.

HSP (F)
High speed printer, high speed punch.

hybrid computer (R)
A computer designed to perform both analog and digital computing for distinct or special purposes.

hysteresis (R)
(1) Lagging in the response of a unit of a system behind an increase or a decrease in the strength of a signal.
(2) Phenomenon demonstrated by materials which make their behavior a functi[illegible] of the history of their environment.

Hz (F)
Hertz.

ICKCMX (C)
Integrated circuit keyset converter multiplexer.

IC/IM (F)
Intercomputer/Intermodular.

ICS (F)
Intercommunications System.

ID (F)
Identify, identification.

ID AMP (F)
Identity amplification.

IDAC (F)
Interconnecting digital to analog converter.

IDR (C)
Input Data Request.

IDS (G)
Interface Design Specification.

IFF (F)
Identification Friend or Foe.

illegal action alert (F)
An alert notifying the operator that he has attempted an action that is never allowed, not allowed under existing circumstances, or beyond the limits of the operational program.

image processing (P)
Computer analysis of a creation of information in image or picture form. The processing of digitized photographic input to the computer.

IMC (R)
Intermodular communication.

IMIC (F)
Intermodule intercomputer.

indicators (R)
Devices registering conditions such as high or equal conditions resulting from a computation. A sequence of operations within a procedure may be varied according to the position of an indicator.

indirect addressing (R)
A method of computer cross reference in which the address part of an instruction word gives the storage location where the address of the operand is to be found. In some computers, the machine address indicated can itself be indirect. Such multiple levels of addressing are terminated either by prior control or by a termination symbol. Synonymous with second level address.

indirect jump (C)
A jump instruction on condition or unconditionally in which the address specified by the jump instruction indicates

the address of a memory location and this location's contents specifies the address of the next instruction to be executed. For example, the return jump instruction for a subroutine exit is an indirect jump.

infix notation (R)
A method of forming one-dimensional expressions (e.g., arithmetic, logical, etc.) by alternating single operands and operators. Any operator performs its indicated function upon its adjacent terms which are defined, subject to the rules of operator precedence and grouping brackets which eliminate ambiguity.

inhibit (R)
To prevent an event from taking place.

Initial Condition Word (ICW) (C)
Within control memory of each CPU, there are four 20-bit storage locations called ICWs which contain the base address for interrupt routines, one for each type of interrupt. Their contents are transferred to the P-register to begin the processing of an interrupt request.

input console (F)
See data display console.

input functions (F)
Those programmed functions primarily concerned with entering, updating, and amplifying information on air, surface and subsurface system entries.

input limited (R)
A system limit in which the time necessary for the CPU to wait for input items restricts the speed of operation.

input stores (F)
A temporary message storage area for a module where a real-time message received by the module awaits processing.

Input/Output Adapter (I/O Adapter or IOA) (R)
A computer hardware unit which contains all necessary electrical and mechanical components needed for the I/O functions of the IOC connected to it. The actual characteristics of the IOA depends upon the system requirements and hardware configuration.

Input/Output Controller (IOC) (R)
A hardware unit that maintains control over sequences of input and output operations once the operations are initiated by the central processor. All input and output words are transferred between the IOC and memory via the memory bus with little or no attention from the CPU.

input/output (IO) channels (F)
Input and output channels in a given digital proces-

sor configuration that are used for the transfer of digital data.

inquiry (R)
A technique whereby the interrogation of computer storage may be initiated at a keyboard or crt terminal.

instruction bank (C)
With regard to any subprogram, an instruction bank may refer to a computer memory unit used for storage of instructions, as distinguished from another memory unit for storage of data. This segregation allows for memory overlap.

instruction word (R)
A grouping of letters and/or digits handled by the computer as a unit to signify the provision of definitions of operations to be performed or the description of associated data.

integer (R)
A complete entity, a natural whole (not fractional or mixed) number.

integrated circuit keyset converter multiplexer (ICKCMX) (C)
A modular designed analog-to-digital converter and multiplexer having integrated circuitry. It can be duplexed to two computers and multiplexed to a number of analog devices.

Integrated Tactical Amphibious Warfare Data System (ITAWDS) (R)
A system which integrates the TDS with a storage, retrieval, and file maintenance MIS operating under the control of a single executive, developed for use on the LHA-1 Class ships.

interlace (R)
To assign successive storage locations on a magnetic drum, usually to reduce access time.

interleaved memory (P)
A memory in which addressing is partitioned into odd and even addressing.

interlude (R)
A subprogram designed for preliminary computations or data organization. For example, calculating the value of some parameter or initializing storage. It is usually overwritten after being executed if no longer needed in the program.

intermediate language (P)
In compiling, the language form produced by translating the source code. This intermediate language can then be either interpreted or used as input to a set of generators to produce relocatable object code. Optimizing compilers usually perform their optimizing process on the intermediate language form of the program.

intermodule message (C)
A group of computer words containing information to be transferred from one program module to another.

internal interrupt (P)
An interrupt generated by a condition within a processor or its main memory. Compare with external interrupt.

interoperability (F)
Interoperability denotes the capability of automated tactical data systems that may (1) exchange data in a prescribed format and frequency and with mutual non-interference and (2) process such data through individual hardware/software and procedural configurations to extract intelligible information which is identical or differs only by an established set of constants.

interpolator (R)
A machine which compares two or more decks of punched cards in order to match, merge or check sequence of same.

interrogation (R)
The simple inquiry of a system to which a quick reply is expected.

interrupt (T,C)
(1) A mechanism used to signal the occurrence of a significant event. Interrupts cause the sequential execution of the CPU to be discontinued after the current instruction and cause control to be switched to a predesignated address in memory.
(2) A hardware operation triggered by an external or internal event that, when honored, transfers processor control from an instruction sequence currently being executed to a predefined address. There are four distinct Interrupt Classes for the AN/UYK-7 computer: Class 1 - Hardware Fault, Class II - Program Error, Class III - I/O Interrupt, Class IV - Enter The Executive State. Every CPU has an ICW for each class of interrupt. Whenever a CPU detects an interrupt, control is given to the interrupt state and the contents of the associated ICW is transferred to the P-register to begin processing the interrupt.

interrupt enable (P)
To allow interrupts to be recognized again after they have been locked out.

interrupt lockout (C)
A condition established within a CPU which prevents an interrupt of any specified class

to be honored. This may be accomplished by the executive program setting any desired combination of the three interrupt lockout designators within the active status register. Additionally, the hardware automatically sets these designators upon honoring an interrupt to temporarily prevent additional interrupts to be honored.

Interrupt Lockout Register (ILR) (R)
A register of an IOC having one interrupt lockout bit for each I/O channel. There is normally one ILR within the IOC for each of the CPUs that can be connected to the IOC.

interrupt state (executive state) (R)
Normally, one of two or more states of CPU operation. This state is reserved for execution of both privileged and nonprivileged instructions. This state is designed for executive system control functions.

Interrupt Status Code (ISC) (C)
A bit code formed within an IOC or CPU and transferred to the appropriate DSW within the CPU which detects the interrupt. This code describes the condition which generated the interrupt.

introspective program (R)
A self-monitoring program.

IOA (F)
Input/Output Adapter.

IOC (F)
Input/Output Controller.

IOC monitor clock (R)
A register in the IOC which, when set with a nonnegative value, will count down at a specified rate of counts per second to a negative, then stop; an interrupt is generated in an attempt to interrupt a CPU connected to the IOC.

IPOFA (F)
Integrated Programmed Operational and Functional Appraisal.

I/O
Input/Output.

I/O buffer (R)
Input/Output buffer. See buffer.

I/O chain (C)
A sequence of instructions stored in main memory to be executed by the IOC to perform a specified I/O function or series of linked functions.

I/O channels (F)
Input/Output channels.

I/O Interrupt (C)
A program module entrance provided by the executive to any module registered for an I/O channel by which the program module will receive control when a monitor

interrupt is detected for the registered I/O channel. (Note that there is another option, the module may have specified for a priority entrance when the monitor interrupt is detected.)

ISC (C)
Interrupt Status Code.

ISEP (T)
Interrupt State Error Processing.

ITAWDS (R)
Integrated Tactical Amphibious Warfare Data System.

iteration (P)
The repeated performance of a process until some condition is met, each performance being carried to completion at which time the condition is checked.

J

JCL (R)
Job Control Language.

Job Control Language (JCL) (R)
A programming language which specifies an environment in which a job is to be run and optional output desired.

job stream (P)
A list of jobs (programs) to be processed on a computer system.

JOSS (R)
A time-sharing language developed by the Rand Corporation to make quick calculations too complicated for a calculator.

JOVIAL (R)
A language for real-time command and control developed by Systems Development Corporation.

juxtaposition (P)
The placement of two or more characters side by side. See catenate.

K

Kalman Filter
(discrete time) (R)
A linear, but possibly time-varying discrete-time filter with the property that it provides a least-mean square error estimate of a discrete-time signal based on noisy observations. The statistical description of the problem is such that the Kalman Filter has a recursive implementation, using a linear combination of new observations and old estimates. Its essential features are that its design is based on a statistical criterion in the time domain, and generally, is time-varying. If the filter is restricted to be time innariant, it becomes the Wiener Filter.

KCMX (F)
Keyset central multiplexer.

kernel (P)
With respect to computer hardware and software, it is the basic or most important component in a system.

key-to-disk (R)
Keypunching of data directly from keypunch machine to computer's peripheral memory (disk). This avoids the intermediate steps of reading the cards into the computer through the card reader, or recording the card image on magnetic tape to be read into the computer.

keyboard (R)
A device for the encoding of data by key depression which causes the generation of the selected code element.

keyset (R)
A device used to manually enter data and instructions into the computer.

keyset central (KSC) (F)
A device which acts as a junction and switching box for inputs to the computer from keysets and other sources. KSC also performs analog-to-digital conversions.

keyset central multiplexer
(KCMX) (F)
A digital data converter which is an I/O device used as a data conversion unit capable of transmitting data between computers, ship sensors, and weapon systems. It also includes those functions of the keyset central.

kineplex (F)
A method for multiplexing digital data.

KIPS (R)
Kilo-Instructions Per Second.

KSC (F)
Keyset central.

L

label (R)
Symbols used to identify or describe an item, record, message, or file. It may be the same as the address in storage.

latency time (R)
(1) In a serial storage device, the time required to locate the first bit or character in a particular storage location. Access time for such a device includes latency time plus the time to read out or write in a complete word.
(2) In a serial storage computer, the delay while waiting for information called for from storage to be delivered to the arithmetic unit; for example, access time minus the time to read out a complete word.
(3) See drum latency time.

LDRI (R)
Low data-rate input.

learning program (R)
See heuristic program.

least significant bit (LSB) (F)
The bit within a word that has the lowest unit value.

least significant character (LSC) (R)
The rightmost character in a number or a word.

least significant digit (LSD) (R)
The significant digit contributing the smallest quantity to the value of a numeral.

librarian (R)
A program that creates, maintains, and makes available the collection of programs, routines and data that make up an operating system. Librarian functions may include system generation, system editing, and utility programs.

library (R)
A compiling system support process which provides a well-organized scheme for identifying, cataloging, listing, updating, and retrieving program elements.

library key (R)
An identifier which insures uniqueness of program element labels on the library.

LILO (P)
Last-in-last-out.

linear combination (R)
A sum over a set where each number is multiplied by a weighting factor. See weighting factor.

linear list (P)
(1) A simple list structure in which data elements are ordered sequentially. Examples are stacks, queues, and deques.
(2) A list of N nodes or

items whose structural properties involve only the linear (one-dimensional) relative positions (ordinal) of the nodes.

link (P)
A means of pointing from one data node or subroutine to another data node or subroutine.

LK-11 (F)
LINK-11. LINK-11 is a high-speed digital communications link using standard formats which provides automatic transfer of information between tactical data systems.

LK-14 (F)
LINK-14. LINK-14 provides semiautomatic, computer controlled, one-way transmission of data via radio teletype at 60, 75 or 100 words per minute.

LK-4A (F)
LINK-4A. A synchronous, digital, ultra-high frequency communication providing one or two-way computer controlled communications between controlling TDS units and LINK-4A equipped aircraft for the purpose of aircraft control.

linked list (P)
A set of data elements in which each element consists of at least two fields. The first field contains information and the second field points to the next element.

list (P)
A family of data elements which may be structured hierarchically or associated by means of links or pointers from one element to another. See linear list, linked list.

list processing (R)
A programming technique using list structures to organize storage which is organized into lists of data items. See list.

listing (R)
See proof listing.

literal (R)
(1) A word, number, or symbol which names, describes, or defines itself and not something else that it might represent.
(2) An item in a source language which remains unaltered during the execution of the program; for example, in the instruction, if X=1 PRINT STOP, the word "STOP" is the literal.

LK-11 (F)
LINK-11.

LK-14 (F)
LINK-14.

LK-21 (F)
LINK-21.

LK-23 (F)
LINK-23.

LK-4A (F)
LINK-4A.

LK-6 (F)
LINK-6.

load (F)
To enter data into either the computer or a storage location.

load point (R)
The preset point at which magnetic tape is initially positioned under the read/write head to start reading or writing.

load time (P)
Time at which a program is loaded into memory.

loader (C)
A program which once loaded into a computer, usually by bootstrap, is designed to load into memory other programs and to perform the necessary program linking functions.

local (P)
An attribute of an entity which applies only to one procedure or one group of procedures.

local data (C)
The data required by only one module. Usually a program module's local data is protected from access by any other program module.

local track (R)
A contact which is being tracked by a TDS platform with its own sensors and for which data is being entered into the TDS.

logical shift (R)
Same as cyclic shift.

LSB (F)
Least significant bit.

LSC (R)
Least significant character.

LSD (F)
Least significant digit.

M

MAC (R)
Multiple access computer.

machine error (R)
A deviation from correctness in data resulting from an equipment failure.

macro (R)
See macroinstruction.

macroinstruction (R)
A machinelike source language instruction that has the capability of generating a set of machine language instructions.

magnetic tape (MT) (F)
In a computer, a strip of plastic material with a ferromagnetic coating upon which digital and other information can be stored by selective magnetization of portions of the surface.

Magnetic Tape Transport (MTT) (R)
Same as tape drive.

MTU (R)
Magnetic Tape Unit.

magnetic thin-film memory (R)
Magnetic thin-film storage provides high speed storage capabilities. By using thin-film memory as an auxiliary, temporary storage medium, faster computation can be obtained; for example, the high access and internal switching times of thin-film make it ideal for use as temporary storage of operands while the actual computation of data is taking place.

main memory (R)
Same as primary storage.

main storage (R)
Same as primary storage.

maintenance console (C)
An operator's control console cabled to the AN/UYK-7 computer which provides a basic display and control of a CPU and IOC operation via switches and indicators. Also known as the maintenance panel and as the local operator/maintenance panel.

mapping (R)
A statistical frequency distribution of concurrent events usually generated by a hardware performance monitor.

mass memory (C)
A large capacity storage device on-line to the computer, usually a peripheral storage device, such as a magnetic tape or disc.

Master Instruction Tape (MIT) (R)
A tape on which all the programs for a system of runs are recorded.

math and conversion routines (C)
A part of a library of general

purpose reentrant subroutines for the common system module. Among the functions supplied are sine, cosine, arcsine, arctangent, (X,Y) to azimuth, polar to Cartesian, Cartesian to polar, ASCII number to binary, binary to ASCII number, BCD number to binary and binary to BCD number.

matrix-parallel processor (P)
A parallel processor used for such applications as Fast Fourier Transforms and Kalman Filtering.

MCC (C)
Monitor and control console.

MCUG (R)
Military Computer Users Group.

memory (R)
Same as storage. See bulk memory, interleaved memory, magnetic thin-film memory, overlapped memory, read-only memory, read/write memory.

memory bandwidth (P)
(1) The maximum number of words per second that may be transmitted on a computer memory bus.
(2) The maximum number of memory addresses that may be referenced simultaneously in a multiaccess memory subsystem.

memory bank (P)
A storage component which has the ability to perform a read/write cycle and is addressed by the basic addressing scheme without appending an additional field.

memory lockout (R)
Same as storage protection.

memory map (C)
A description of the locations of all segments of an internally stored program. Includes the location of segments of program instructions, data, and special variables and parameters.

memory protect (R)
A hardware feature which provides positive protection to the system executive routine and all other programs. It protects against processor execution I/O data-area destruction. Because it is a hardware function rather than software, it reduces multiprogramming complexities.

memory resume (C)
This signal is part of the request/acknowledge logic between memory units and CPU's or IOC's which indicates that a memory access has been completed. In the AN/UYK-7 computer, a class I interrupt is generated within a CPU or IOC when a memory unit fails to give this signal after a specific time elasped, since the request for memory access was made.

memory unit (R)
A hardware module of the computer that contains the

memory access circuitry and the core memory storage for a specified number of computer words of N bits each. Each memory unit may have multiple access ports for interface with several CPU's and IOC's.

meta assembler (P)
A definition processor which accepts the definition or syntax rules of an assembly language and is then able to recognize that source language and translate it to some intermediate or target language.

meta compiler (P)
A definition processor which accepts the definition or syntax rules for a high level programming language and produces a compiler able to compile machine language programs from source programs written in the high level language specified by the syntax rules.

meta language (P)
(1) A higher level language by which other languages may be analyzed.
(2) A language used to talk about a language is a meta language.

microcode (R)
A code that represents the smaller and simpler concepts, instructions, or operations; for example, a code that represents computer instructions, such as add, compare, fetch, move tape, read, write, or transfer to storage. Often, several microinstructions form a single macroinstructions. Each of these microcoded instructions involves only one simple step. Sometimes microcoding makes use of certain suboperations not ordinarily accessible to the programmer such as parts of multiplication or division operations.

microcomputer (R)
A computer implemented with LSI CPU (microprocessor) chips. It may have 4, 8, 16 (or more) bit word length. A microprocessor system includes a microprocessor CPU, program memory (usually ROM), data storage (usually RAM), I/O circuitry, control and interrupt circuitry, and clock generators.

microinstruction (R)
Small, single, short, add, shift or delete type of command.

microprocessor (R)
A processor which executes microinstructions contained in its own micromemory. A microprocessor forms the control element of a CPU.

microprogramming (P)
A technique for designing and implementing the control function of a data processing system as a sequence of control signals to interpret fixed or dynamically change-

able data processing functions. These control signals, organized on a word basis and stored in a fixed or dynamically changeable control memory, represent the states of the signals which control the flow of information between the executing functions and the orderly transition between these signal states.

microprogramming (hard) (P)
Microprograms furnished as firmware, i.e., retained in a fixed and non-modifiable control store.

microprogramming (soft) (P)
(1) Microprograms which are held in a modifiable control store, usually referred to as a RAM.
(2) Specifically the interpreter technique used in the Burroughs 1700 computer.

minicomputer (R)
A small inexpensive computer the size and complexity of which is the option of the various computer manufacturers. Word lengths are generally 18 bits or less. The I/O capability is generally limited to 4 channels or less and the I/O processing is usually accomplished by the CPU.

MIPS (P)
Millions of instructions per second.

mnemonic (C)
A mnemonic is any code made up of alphabetic letters, decimal digits, and other symbols used to identify language instructions, subroutines, computer operations and used as labels and tags within program coding.

mockup (F)
A model, built to scale, of a machine, apparatus or weapon. It is used in studying the construction and in testing a new development, or in teaching personnel how to operate the actual machine, apparatus, or weapon.

mode (R)
(1) A method of operation, e.g., binary mode, interpretive mode, alphanumeric mode, etc.
(2) The characteristic of a quantity being suitable for integer or floating-point computation.
(3) In the statistical sense, the most typical item in a series of quantities or values, i.e., the quantity or value of that item which appears most frequently in the series.
(4) Reflects the functional operation of a system or device; for example, input mode, output mode, identification mode, privileged mode, etc.
(5) See privileged mode.

model (F)
TDS programs of a given model communicate via digital links with TDS programs of the same model but because of language (data element and format) differences, *cannot* communicate effectively with TDS programs of a different model. Therefore, a "model" is a digital data link language which includes not only the words (data elements and formats) but the grammar (usage rules) for using the language.

modem (R)
Modulator-demodulator.

modulator-demodulator (modem) (R)
A device used for combining and/or separating digital data at various rates. For example, converting a typical two-level (binary) computer signal into a two-frequency sequence of signals suited to the telephone network.

module (R)
(1) A hardware system portion treated as a separate logical entity for purposes of design, fabrication, implementation and replacement or modification.
(2) The hardware modular design concept defines the module as an interchangeable plug-in item containing components which represents an incremented block for expanding computer capacity.
(3) A module is an interdependent subset of a computer program which performs an identifiable task. It is normally designed to interact with other modules at one level of control, generally through the executive/operating system. Operating system modules comform to specific standards so that control programs will have an identical interface with all processing modules. A program module is designed to act independently with the minimum amount of interface to all other modules of the system.

monitor and control console (MCC) (C)
This peripheral device contains remote control units for AN/UYK-7 CPUs and an alphanumeric character display which may be duplexed to two AN/UYK-7 IOCs. Up to four of these units may be multiplexed over a single I/O channel, or duplexed pair of I/O channels.

monitor clock (R)
A time device of the computer designed to count down from a programmed value at a specific rate of counts per second. Upon reaching a negative

value, it will stop and will generate an interrupt.

monitor interrupt (C)
A signal generated within an IOC as a result of termination of a buffer which was initiated with the monitor. The IOC will then attempt to interrupt a CPU connected to the IOC.

most significant bit (MSB) (F)
The digit in a number or series of digits which has the greatest value.

most significant character (MSC) (R)
The character in the left-most position in a number or word.

most significant digit (MSD) (R)
The significant digit contributing the largest quantity to the value of a numeral; for example, the left-most digit.

MPD (F)
Multipurpose display.

MRC (R)
Maintenance repair card.

MS (F)
Manual strobe, millisecond, Monitor System.

MSB (F)
Most significant bit.

MSC (R)
Most significant character.

MSD (F)
Most significant digit.

MSG (F)
Message.

MSI (P)
Medium scale integration.

MSL (F)
Missile.

MT (F)
Magnetic tape, message type, manual tracking.

MTT (F)
Magnetic tape transport.

MTTI (F)
Magnetic tape transport interface.

MTU (F)
Magnetic tape unit.

MU (F)
Memory unit.

multicomputer (R)
A computer system employing multiple arithmetic and logic units, most often operating in parallel and on the same program. The term also applies to computer systems with several mainframes.

multiple access computer (MAC) (R)
A computer from which output or input can be dispatched to or received from more

than one location.

multiple aperture core (R)
A specific magnetic core with multiple holes through which wires can pass to create more than one magnetic closed path and used in nondestructive reading.

multiple precision (R)
The use of two or more computer words to represent a single numeric quantity or numeral.

multiple precision arithmetic (R)
The feature of a computer which allows two or more words to be used to accommodate a quantity; this avoids the cutoff of a lesser significant digit.

multiprocessing (R)
(1) The utilization of several computers to logically or functionally divide jobs or processes, and to execute various programs or segments asynchronously and simultaneously.
(2) Two or more processors in a system configuration; one processor to control the system, with the others subordinate to it.
(3) Loosely, parallel processing.

multithread processing (R)
A processing environment in which message threads are processed in parallel.

N

nonvolatile memory (R)
Same as nonvolatile storage.

nonarithmetic shift (R)
Same as cyclic shift.

nondestructive read (R)
(1) As applied to a storage medium, one that cannot be erased and reused; for example, punched cards or perforated tape.
(2) A reading process that does not erase the data in the source.
(3) A reading of the information in a register without altering that information.

NTDS (C)
An acronym for Naval Tactical Data System. It is found in documentation to refer to those things specifically defined for use in the NTDS such as the NIDS magnetic tape format.

numeric analysis (R)
The study of methods of obtaining useful quantitative solutions to mathematical problems, regardless of whether an analytic solution exists. The study of errors and bounds on errors in obtaining such solutions.

NWIP (G)
Naval Warfare Information Publications.

NWP (G)
Naval Warfare Publications.

O

OA (D)
Output Acknowledge.

OCSOT (R)
Overall Combat System Operability Test.

ODR (O)
Output Data Request.

OEM (P)
Original Equipment Manufacturer.

off-line (F)
(1) Pertaining to peripheral equipment or devices not in direct communication with the central processing unit of a computer.
(2) Pertaining to a process or computer program which operates in the same equipment as, but not at the same time as an operational program.

OM (G)
Operator's Manual.

OP (F)
Operational program.

OP Code (R)
Operation Code.

Operand (R)
(1) A quantity entering into or arising from an operation; it may be an argument, result, parameter, or an indication of the location of the next instruction.
(2) The address or name portion of an instruction.

operational program (OP) (F)
Programs produced for Fleet units designed to work with other Fleet units under operational conditions.

Operational Test and Evaluation (OT&E) (F)
Testing designed to give results related to the service environment in which the systems will be operating. It is accomplished by service operational and support personnel of the type and qualification of those expected to use and maintain the equipment. OT&E relates not only to technical suitability, but also operational effectiveness and suitability, including maintainability, reliability, training and logistics.

Operator panel (R)
A hardware control panel, optionally a part of a computer mainframe, containing switches, indicators and meters such as computer power, blower power, master clear, logic power, run and stop switches.

OPFCO (R)
Operational Program Function Checkout.

OPR (F)
Overall Parity Reliability (LINK-11).

OT&E (N)
Operational Test and Evaluation.

Output Acknowledge (OA) (R)
A control signal sent by the CPU or IOC, as applicable, in response to an output request signal from a peripheral subsystem.

Output Data Request (ODR) (R)
A control signal sent by a peripheral control unit to the CPU or IOC, as applicable, to indicate that the control unit can accept a function or output data word.

over punch (R)
Same as zone punch.

Overall Combat System Operability Test (OCSOT) (R)
An on-line test which comprehensively assesses the entire combat system in an operational environment. The scenario oriented events may be conducted serially or in parallel and methods of evaluation, including fault isolation, are provided.

overlap (C)
A capability of the CPU where the current operand and next instruction are retrieved from memory in parallel, provided that the operand and next instruction lie in different memory units. This can effectively cut the access time per instruction execution by half for instructions requiring two memory cycles for their execution.

overlapped memory (P)
The capability of a computer system to initiate a read/write storage cycle for a memory bank prior to the completion of a previous read/write cycle for a different memory bank.

overload (R)
Occurs when the rate of input into a system is so concentrated that the system cannot process the input on a real-time basis.

P

P-register (R)
A register which specifies the core memory address of the instruction to be executed.

packed decimal (R)
A system means of data representation in which two digits per character can be used to increase speed and capacity in fields where alphabetics and special characters are not being used.

packed format (R)
A binary-coded decimal format in which two decimal digits are represented within a single byte of storage. This is accomplished by eliminating zone bits.

page (R)
A quantity of core storage capacity used when allocating memory for partitioning programs into units or control sections. A page is standardized, usually 512 to 4096 bytes or words and/or 8 to 64 lines of source program coding, as used for displaying the coding on crt(s). For crt(s) used in conversational time-sharing, a single page of a program can be displayed at one time for the programmer's or user's inspection, the size varying with the size and capacity of the crt, and not related to the memory page stated above.

parameter (F)
(1) A numerical value representing, or characteristic of, an element in a calculation.
(2) A variable which is given a constant value for a specific purpose or process.

parse (P)
(1) To break into constituent parts.
(2) To describe a sentence grammatically by identifying its components syntactically.

partitioning (R)
Subdividing one large block into smaller subunits which can be handled more easily, e.g., partitioning data sets.

password (P)
A predetermined character string which will allow access to a system.

patch (F)
(1) To modify a routine in a rough or expedient way.
(2) A temporary electrical connection.
(3) See program patch.

patch bay (R)
A concentrated assembly of electrical tie points that provide for electrical connection between the inputs and outputs of computing

elements, reference voltages and ground.

patchboard (R)
A removable board containing sockets into which patch cords are connected to program the machine. To change the program, the patch cord wiring pattern on the patchboard or the patchboard itself must be changed.

PCP (R)
Program Change Proposal.

PDD (G)
Program Description Document.

PDM (G)
Program Design Manual.

PDS (G)
Program Design Specification.

PEP (F)
Performance Evaluation Program.

PER (R)
Photo Electric Reader.

Peripheral Equipment Simulator (PES) (F)
A device used to make one computer seem like a peripheral device to another computer. The device the STP is testing.

peripheral processing (P)
That processing performed by a peripheral unit.

permanent memory (R)
Same as nonvolatile storage.

PES (F)
Peripheral Equipment Simulator.

phase (R)
As applicable to NTDS programs, phase refers to a state or modification to a particular model or program which has been developed, implemented, and accepted for a given production period. Such modifications authorized by competent authority will:
(1) Include the incorporation of new capabilities and latest technological advancements to the basic model for improving Fleet readiness dictated by operational requirements.
(2) Maintain the compatibility between and among programs delivered from the basic model.

ping-pong (R)
The programming technique of using two magnetic tape units for multiple reel files and switching automatically between the two units until the complete file is processed.

pipeline processing (P)
A hardware technique for rapidly performing repetitious simple computational processes on data arrays.

Plan Position Indicator (PPI) (R)
A cathode ray tube used for visual display of data.

plugboard (R)
See patchboard.

PMS (R)
Preventative Maintenance System.

POFA (F)
Programmed Operational and Functional Appraisal.

pointer (R)
An interim or final address contained in a register or memory cell that provides access to information whose location is unknown to the program segment(s) requiring its use. The pointer is normally established and maintained by the executive/operating system as information is rearranged in core memory.

POL (R)
Problem-Oriented Language.

polling (R)
A centrally controlled method of calling a number of points to permit them to transmit information.

port (active terminal) (P)
An entry point into an on-line or conversational system.

POS (F)
Position.

POSIT (F)
Position.

power supply unit (C)
An electronic power supply transforms input power to the requirements set by the other hardware units within the mainframe. It accepts logic signals from the other hardware units within its mainframe to indicate the status of secondary voltage and temperature conditions within those units.

power tolerance (R)
As applicable to computer power sources, the range of input power that will be accepted by input power monitor circuitry before initiating a power failure interrupt.

power tolerance fault (R)
The condition occurring when the input power monitor circuitry identifies a power failure and initiates a power tolerance interrupt.

PP (G)
Program Package.

PPI (F)
Plan Position Indicator.

PPS (F,G)
Pulses per second, Program Performance Specification.

precision crt display terminal (R)
This is a 16 inch random-position, point-plotting crt with magnetic deflection and focusing. It is useful for conversion of digital

computer data into graphic and tabular form without the greater flexibility.

preventive maintenance (R)
Maintenance of a computer system to keep equipment in operating condition and prevent failures during productive runs.

primary memory (R)
Same as primary storage.

primary storage (R)
The main internal storage unit or medium of a computer system. Synonymous with central memory, main memory, and main storage.

primitive (R)
The most basic or fundamental unit of an element.

primitive function (R)
A fundamental element of a process which can be isolated, defined, and coded as a subroutine or macro.

priority (R)
A measure of the urgency of an action required on particular entries and tasks. Priority sequence dictates the queueing of entries and tasks for processing.

privileged instruction (R)
Those CPU instructions which may not be executed in the task state, i.e., may only be executed in the executive state.

privileged mode (P)
A condition or operating mode of a computer system which allows certain functions, usually within the executive system, to take place.

program (F)
(1) The complete plan for the solution of a problem. More specifically, the complete sequence of coded istructions and data necessary to solve a problem.
(2) To plan the procedures for solving a problem. This may include among other things, the analysis of the problem, preparation of flow charts, development of subroutines, allocation of storage locations and specification of input and output routines.
(3) See heuristic progam, transient program.

program card (R)
A punched card used to instruct a machine in the steps or operations it is to perform.

program control (R)
Descriptive of system in which a computer is used to direct an operation or process and automatically hold or make changes in the operation or process on the basis of a prescribed sequence of events.

program counter (R)
A register which holds the identification of the instruction word to be executed next in time sequence following the present operation. Also, a register, often a counter, which is incremented to the address of the next sequential storage location, unless transfer or other special instruction is specified by the program.

Program Evaluation and Review Technique (PERT) (R)
A program management tool which requires an extensive analysis of the overall project in order to list all the individual activities or jobs which must be performed in order to meet the total objective. Activities are then arranged in a network that displays the sequential relationship among them. By this technique, areas which impose the greatest time restrictions on completion of a project can be highlighted.

program fault (R)
The condition identified by a CPU while executing a program which generates an interrupt. These interrupts are identified by their interrupt status codes, including: characteristic overflow, CP illegal instruction, privileged instruction error, operand breakpoint match, CP monitor clock, etc.

program patch (F)
A method of changing a computer program by jumping to available memory areas and inserting appropriate instructions to affect the change. Used to correct a small deficiency or error in a program.

program segments (R)
A program segment is a section of a program which is accessible by one base address. All computer words within a segment are accessible by specifying an offset from this base address. This affords program segments to be relocatable and simplifies memory mapping, memory protection, shared memory and other capabilities.

program step (R)
A single operation of one instruction or command in a sequence of instructions.

program stop (R)
Implemented by use of a stop instruction that will automatically stop a machine under certain conditions, or upon reaching the end of the processing, or completing the solution of a problem.

program switch (R)
A particular instruction which may be placed in a program to allow the computer to select one of a number of alternative processing paths as dictated

by the program instructions.

Program Trouble Report (PTR) (F)
A standard form used to indicate trouble suspected in an operational program. It provides for the program author a brief background description of the problem and other related information helpful in pinpointing the trouble.

Programmed Operational and Functional Appraisal (POFA) (R)
POFA consists of a computer program and detailed operating procedures which are utilized during installation and maintenance for the adjustment, alignment and operational assessment of digital computers and associated equipments. A POFA may be used either on-line or off-line.

programming language (P)
(1) A language which is used to construct computer programs.
(2) An artificial language which can be "understood" by a computer.

PROMS (P)
Programmable Read Only Memories.

proof listing (R)
A specific report prepared by a processor that indicates the coding and comments as read into the computer. For high level languages, the assembly or machine languages, the assembly or machine language may also be listed.

propagated error (R)
An error occurring in one operation which influences later operations.

propagation time (R)
The time required for an impluse to travel from one point to another.

PT (F)
Paper Tape.

PTR (F)
Program Trouble Report.

PTRAN (F)
Parameter Translator Program.

PTU (F)
Paper tape unit.

pushdown list (R)
A list of items where the last item entered becomes the first item of the list and the relative position of the other items is "pushed back" by one item.

pushup list (R)
A list of items where each item is entered at the end of the list, and the other items maintain their same relative position in the list.

Q

Q test (R)
A comparison test of two or more units of quantitative data for their equality or nonequality.

quantizer (R)
A device which converts an analog measurement into digital form.

query (R)
A specific request for data, instructions, switch state, position in a queue, etc., while the equipment is computing or processing.

queue (P)
A linear list for which all insertions are made at one end of the list and all deletions are made at the other end.

quiescing (R)
The process of completing a multiprogrammed computer to a stop by denying it new or continuing tasks.

R

RAM (P)
Random Access Memory.

RAN (R)
Read Around Number.

Random Access Memory (RAM) (R)
A storage retrieval device in which the time required to obtain information is independent of the location of the information last obtained.

RC (F)
Reduced Capability.

RDUC (O)
Receive Data Unit Computer.

reentrant (R)
That property of a program that enables it to be interrupted at any point and then resumed from the point of interruption. The program's environment, registers, working storage, control indicators, etc., is preserved at the time of interruption and restored when the program is resumed.

reentrant routine (P)
A routine which may receive a transfer of control without the requirement that it has previously returned control to the last program which called on it. In order to accomplish this, the reentrant routine (A) assigns a different working storage area with each control transfer it receives or (B) uses areas provided by the calling program.

reaction time (F)
The elapsed time between the initiation of an action and the required response.

Read Only Memory (ROM) (R)
A memory that cannot be altered in normal use of the computer. Usually, a small memory that contains often-used instructions such as microprograms or system software.

read/write memory (P)
A memory in which the stored data is available at any time and can be changed in normal system operations.

ready analog inputs (F)
Analog information constantly available to a system. Keyset central accepts four ready analog inputs: course, speed, pitch, and roll.

real-time (R)
The mode of information processing that occurs in any system that continually senses and responds to selected changes in the object environment in a manner and in time to permit the system to regulate and control some aspects of ongoing events in the system and its environment. Real-time is the actual time

during which a physical process transpires.

Real-Time Clock (RTC) (R)
A real-time clock develops readable digits or periodic signals for the computer to allow computation of elapsed time between events, and to initiate the performance of time initiated (periodic) processing.

real-time process (R)
The processing of information or data in a sufficiently rapid manner so that the results of the processing are available in time to influence the process being monitored or controlled.

real-time system (R)
A data-processing system synchronized with a physical process so that the results of the data processing are useful to the physical operation.

record block (R)
See block.

record gap (R)
The unrecorded portion between records on magnetic tape, used to prevent errors through loss of data or overwriting, and to permit stop-start tape operations. Synonymous with inter-record gap.

recording head (R)
See head.

recursion (R)
The continued repetition of the same operation or operations.

recursive algorithm (P)
An algorithm consisting of a set of rules such that by repeated application of the rules, the result is uniquely determined in terms of previously defined values.

recursive routine (P)
If a routine calls on itself or if it calls other routines which call back on the original routine, and if that routine is intended by design to handle such calls, it is a recursive routine.

redact (R)
To edit or revise input data.

redaction (R)
A new or revised edition of input data.

Reduced Capability (RC) (R)
Programs designed to operate in something less than the normal full suite of system equipment.

region (R)
In relative coding, a group of location addresses that are all relative to the same specific reference to a base address.

regional control module (R)
A required module for a given region. Its purpose is to perform essential services

for all other modules in the region.

regional module (R)
Any module of a given region.

register (F)
An electronic or magnetic device for temporary storage of data in the form of bits; a computer storage unit of prespecified length; for example, 30 bits, usually of magnetic cores or magnetic spots. In a computer's arithmetic and control sections, a fixed set of electrical flip-flops used to hold special purpose data; for example, addresses, shift counts, arithmetic operand.

relocatable program (R)
A routine in which instructions are written in such a way that the routine can be moved to another location and then executed at that location. Its object-time location is determined by the processor.

remedial maintenance (R)
Maintenance performed by contractor following equipment failure; performed as required, on an unscheduled basis.

remote computer (R)
(1) With reference to a program subset, e.g., module, routine, any computer in the equipment suite other than the one in which the subset is located.
(2) A system which has four principal components: a central processor, a communications linkage, a terminal device, and a user. These components interact to carry out a task.

resolution (R)
The ability to distinguish between two values or objects.

response time (P)
In an on-line information system, the time between end of inquiry transmission and the completion of the response to that inquiry.

retrieval (R)
The process of finding stored information.

retrofit (R)
The adjusting of existing systems or programs to accommodate a new part; also, the performing of all other changes necessary in related systems or programs.

rewrite (R)
The process of restoring information in a storage device to its pre-read state.

right justified (R)
When right-most digit of a data field is made to occupy the right-most position of a register or memory word.

ring (P)
A circulary linked list of data items.

ring shift (R)
Same as cyclic shift.

RJE (R)
Remote Job Entry.

roll-in (R)
Return to a main or internal storage unit of data which had previously been transferred from main or internal memory units to various external or auxiliary units.

roll-in-roll-out (R)
The swapping of one set of data and programs for another between core memory and peripheral storage. Characteristic of time sharing and some other real-time systems.

roll-out (R)
A process of transferring data from main or internal memory units to various external or auxiliary units.

rollback (R)
A technique to restart a program after system failure. Snapshots of data and programs are stored periodically. The system restarts at the last snap shot.

ROM (P)
Read Only Memory.

round robin (R)
As used in jargon of program designers, round robin describes a priority scheme. According to this scheme, after an item in the list is checked, it is not checked again until all others in the list have been checked.

rounding (R)
To adjust the least significant digits resulting from an arithmetic operation in truncation to reflect the dropped portion; for example, 2.7561 becomes 2.76 when rounded.

routine (R)
An ordered set of instructions that may have some general or frequent use. See executive routine, library routine, reentrant routine, recursive routine, service routine, subroutine, supervisory routine, tracing routine, utility routine.

RPM (R)
Revolutions per minute.

RPS (R)
Revolutions per second.

R/W (O)
Read/write.

RTC (F)
Real time clock.

S

scalar quantity (R)
A quantity having magnitude but not direction, e.g., volume, temperature, size, etc., while vector quantities, such as wind velocity, have both magnitude and direction.

scheduler (R)
A part of an executive operating system that performs the function of allocating to application program segments the resources of the CPU(s).

scheduling algorithm (R)
A set of rules which determine the length of user programs' time quantums for execution and the frequency of execution.

SCP (R)
System Change Proposal.

scratchpad memory (R)
A highspeed memory used as intermediate storage between core memory and lower speed peripheral storage.

SDP (P)
Software Development Plan.

SDS (P)
Software Design Specification.

search (R)
See Binary search, Conjunctive search, Dichotomizing search, Disjunctive search, Fibonacci search.

search-read function (R)
An identifier computer word is stored in a register in the peripheral unit and compared with each word ready by the peripheral. This avoids the delay caused by interrupting the CPU to examine each word.

secondary memory (R)
Same as secondary storage.

secondary storage (P)
The secondary or backing store of the storage hierarchy of a computer system. Usually accessed through the input/output subsystem and most often implemented as drum, disk, or slower speed core storage. Synonymous with secondary memory.

sector (R)
The smallest addressble portion of a disk storage track or band.

seek (R)
The process of obtaining specific records from a peripheral random access file searching on the basis of a key word or words.

SEL (F)
Select.

semantics (P)
The semantics of a formal language is a set of rules that assign meaning to valid strings in the language.

sensor (F)
A technical means to extend man's natural senses; an equipment which detects and indicates terrain configuration, the presence of military targets, and other natural and man-made objects and activities by means of energy emitted or reflected by such targets or objects.

sentence (P)
A sentence over an alphabet is any string of finite length composed of symbols from the alphabet.

SEQ (F)
Sequence.

sequence search (R)
A succession of time-delay circuits arranged so that completion of the delay in one circuit initiates a delay in the next circuit.

sequential logic (P)
A logic circuit which has outputs that are at any given time a function of the external inputs, as well as the stored states at that time.

serial memory (R)
Same as dynamic storage.

serial processing (R)
Sequential processing of parts of the whole; for example, characters of a word or programs of a system using the same processing facilities. Contrast with parallel processing.

serially reusable (P)
The property of a program that is resident and is being executed which permits the program to be entered again after its completion without being reloaded.

service station (P)
A station that provides a specific service within a distributed operating system.

shared memory (R)
Same as shared storage.

shared storage (P)
Storage or memory which can be accessed by more than one processor.

shared task (R)
A program segment which may be scheduled for execution in any of the CPUs of a totally shared multi-CPU computer system.

signal conditioning (R)
(1) The manipulation of transducer or transmitter outputs to make them suitable for input to

peripheral equipment.
(2) Operations such as linearizing and square root extraction performed within a computer.
(3) The process of pulse shaping, pulse clipping, digitizing, linearizing, etc.

SIM (F)
Simulation.

simplex (R)
In communications, pertaining to a circuit capable of one-way operations only.

simplex channel (R)
A channel which permits transmission in one direction only.

simplex system (R)
A system configuration that does not include standby equipment.

SIM/EXT (F)
LINK-11 Simulator Extractor.

simulation (computer environment) (R)
The technique of setting up a routine for one computer to make it operate as nearly as possible like some other computer.

simulation (mathematical) (R)
The two basic types of simulation are deterministic and probabilistic. In most real-time systems, inputs are unpredictable except for expected probability of activity. These probability distributions are used by simulator programs using random number generators, via the Monte Carlo Technique, to estimate the time required for execution, queue lengths, response times, etc. Deterministic simulation involves use of math formulae in place of probabilities to determine the result of processing a given set of inputs. The major advantage of simulation is that it allows a system which may not be developed to be exercised and modified easily via a math model.

simulator (hardware) (R)
A device which simulates the output of more complex equipment to a computer.

simulator (program) (R)
(1) A computer program that implements a math model.
(2) A computer program that delivers data that simulates an external environment to another program.

simultaneous operations (R)
Simultaneous access to or operation of different sections of a computer; for example, input to core from tape and uninterrupted CPU operation, or input to core from disk and output to tape from core.

single precision (R)
Single precision arithmetic is the use of one computer

word per number; double precision uses two words, etc.

singlethread processing (R)
A processing environment in which processing of a single message is completed before processing of a new message is begun.

smoothing (F)
A process in the computer tracking program which smooths position and velocity computations to prevent erratic track position corrections from causing unrealistic track course and speed fluctuations.

SMP (F)
System Monitoring Panel.

snap (C)
A dynamic printout during computing at specified breakpoints of selected items in storage.

SNR (O)
Signal to noise ratio.

SOD (G)
System Operational Design.

software summary (I)
A condensed description or abstract of a computer program or automated data system.

SOM (G)
System Operator's Manual.

SOR (P)
Specific Operational Requirement.

SOS (G)
System Operational Specification.

source program (R)
A program coded in a language other than machine language that must be translated into machine language before use.

SPR (C)
Storage protection register.

stack (P)
A linear list for which all insertions and deletions are made at one end of the list.

stochastic (R)
Referring to trial and error procedures with results defined in terms of probabilities. Contrast with fixed step-by-step procedures of algorithms.

stop (R)
See dynamic stop, program stop, stop instruction, stop key.

stop instruction (R)
A machine operation or routine that requires manual action other than the use of the start key to continue processing.

stop key (R)
A push button on the control panel by which processing can be halted. Processing usually is halted only after the completion of an instruction being executed at a given moment.

storage (R)

(1) Pertaining to a device into which data can be entered, held, and retrieved at a later time.

(2) Loosely, any device that can store data.

(3) See acoustic storage, associative storage, cache storage, content addressed storage, control storage, fixed storage, main storage, N-core-per-bit storage, nonerasable storage, nonvolatile storage, parallel-search storage, permanent storage, primary storage, read-only storage, secondary storage, shared storage, tertiary storage, virtual storage, volatile storage.

STR (R)

Software Trouble Report.

string (P)

(1) A sequentially ordered set of data items.

(2) A finite sequence of symbols.

strobe pulse (R)

A pulse to gate the output of a sense amplifier into a trigger or register; also called a sample pulse.

structured programming (R)

A system design, implementation and computer programming technique encompassing the following concepts:

(1) Top-down design in which overall program logic is designated first, each major component before any of its subcomponents, etc.

(2) Chief programmer team managerial approach to program production incorporating as a nucleus a chief programmer, a backup programmer, programming secretary and defined relationships among any additional specialists.

(3) Top-down programming in which overall program logic is coded and tested before any of its subcomponents, etc.

(4) Programming using only the three logic structures of a simple sequence of two or more operations; a conditional branch to one or more operations and return (if A then B else C); and a repetition of an operation while a condition is true (Do while).

(5) Programming with limited or no "Go To" logic.

(6) Picture-on-a-page technique in which the overall program logic is represented on the first page, each major component is represented on a subsequent page, each subcomponent on a still later page, etc.

stunt box (R)
Control nonprinting functions of a teletype terminal.

subprogram (F)
A part of a large program which can be converted into machine language immediately.

subroutine (first order) (R)
A subroutine entered directly from the main program. This subroutine may enter other, second order, subroutines, but will ultimately return control to the main program.

supervisory program (R)
See executive.

support programs (R)
Those programs which support or aid the supervisory programs and the application programs, and include diagnostics, testing, data generators, etc.

symbolic instruction (R)
Instruction in assembly language directly translatable into a machine code.

SYNC (F)
Synchronization.

synchronous (R)
See synchronous computer, synchronous data transmission.

synchronous data transmission (R)
In this type of data transmission, each character consists of N information bits depending upon the code structure. There are no start or stop bits. Timing is derived through synchronizing characters at the beginning of each message or block of data. Contrast with asynchronous data transmission.

syntactic category (P)
In a formal grammar, syntactic categories are the non-terminals or variables. The non-terminals form a finite set which is disjoint from the finite set of terminals. The union of the non-terminals and the terminals from the set are called the alphabet or volcabularly of the language. Non-terminals are metalinguistic in contrast to the actual terminals or words of the language.

syntactic error (R)
System errors are categorized as follows:
(1) Composition. Typographical errors, violations of specified form, of statements and misuse of variable name; e.g., incorrect punctuation, mixed-mode expression, undeclared arrays, etc.
(2) Consistency. Statements that are correctly composed but conflict with other statements, e.g., conflicting declaratives, illegal statements ending a Do Range, failure to follow each transfer statement with a number-

ed statement, etc.

(3) completeness. programs that are incomplete, e.g., transfers to nonexistent statement numbers, improper Do nesting, illegal transfer into the range of a Do Loop, etc.

syntax (P)
The syntax of a language is a set of rules by means of which it is possible to determine whether any given string is a valid string in the language.

SYS (F)
System.

system architecture (P)
Originally, a representation of the hardware components of a system and their interconnections considered from the viewpoint of the whole rather than of a single part. This term has come to include software as well as hardware.

system data design (C)
Data that is defined to be shared by many program modules. An example of a system data design is the common system data stores.

System Monitoring Panel (SMP) (F)
The system monitoring panel directs and monitors performance of the computers, operational program, and associated peripheral equipment.

system overhead (P)
The percentage of time spent by an executive system in doing processing other than interrupt handling.

systems analysis (R)
Examination of an activity, procedure, method, technique or business to determine what must be accomplished and how necessary operations may best be accomplished.

T

TADIL A (R)
LINK-11 (NATO).

TADIL B (R)
LINK-14 (NATO).

task (P)
(1) A portion of a computational problem that can be executed independently of the other portions.
(2) A process of computer oriented unit of computing work as distinguished from a job or programmer oriented unit of work.

task list (R)
A part of an executive operating system which lists the entrances to each program segment, narmally in some order of priority. This list is referenced by the executive in order to determine the next task to be performed.

task state (R)
The state or mode of CPU operation that performs the application functions of a computer program. Some operations of the CPU cannot be performed in this state.

TDM (N)
Test Development Manager.

TDS (F,O)
Tactical Data System, Tactical Display System.

teletype (TTY) (F)
An input/output equipment. It is capable of providing printtype information under the control of a computer or computer oriented system; for example, data link, or similar equipment (TTY to TTY). It also provides a means of inputting alphanumeric information into the computer from a manually operated keyboard.

terminal equipment (F)
Communications equipment in place at each end of a circuit to permit the stations involved to accomplish the mission for which the circuit was established.

tertiary memory (R)
Same as tertiary storage.

tertiary storage (P)
The third level of storage in a computer system storage hierarchy. Usually consists of drum, disk, or tape storage. Synonymous with tertiary memory.

Test Development Activity (TDA) (N)
An agency, government or contractor, normally responsible to a TDM for preparing technical test documentation.

Test Development Director (TDD) (N)
The director responsible to the TSTD for development of test documentation and for supporting execution of the test program for one of the three major systems in a ship, i.e., combat, mobility, and support.

Test Development Manager (TDM) (N)
A manager responsible to a TDD for development of test documentation for subsystems of the major ship systems; for example, Command and Control, AAW and ASW under the TDD for the combat system.

test program (F)
A program produced to test a design concept which may or may not be included in an operational program. Requires complete documentation.

thin-film (R)
See magnetic thin-film memory.

thread (R)
The sequence of events in programs required for the computer processing of a message.

TIDP (F)
Technical Interface Design Plan.

time out (C)
The process of timing a program's execution by a monitor clock. Usually, the program is interrupted when it has run for the allowed time. Time outs are used to suspend the execution of a program which may be completed at a later time or used to detect a fault condition.

time sharing (R)
The use of a device for two or more purposes during the same overall time interval; accomplished by interspersing the computer component actions over time.

time slice (R)
The time quanta of program processing allowed to a time-shared program. The time-shared program may require more than one time slice to complete execution.

TLU (R)
Table look up.

TOR (G)
Tactical Operational Requirement.

Total Ship Test Director (TSTD) (N)
The manager responsible to the Ship Acquisition Project Manager (SHAPM) for development and execution of the Total Ship Test Program and overall analysis and evaluation of T&E program progress and effectiveness.

TP (G)
Test Plan.

TPR (G)
Test Procedure.

TR (G)
Test Report.

tracing (R)
An interpretive diagnostic technique to record on an output device during the execution of each instruction and its results, which provides a record of each processed instruction.

trailer (R)
A record following a group of detail records and containing information about a group not present in the detail records.

transaction (P)
(1) A single inquiry/response cycle in an on-line information system.
(2) A single unit of data input in a batch oriented data processing system.

transaction rate (P)
The average number of transactions of an on-line system per unit time.

transcribe (R)
To copy, with or without translating, from one external storage device to another.

transient program (P)
A program that is called into main or primary memory for execution each time it is needed.

transition diagram (P)
A method of representing the effect of a sequence of input signals on the flow of control among hardware or software components of a system and on the outputs of those components.

translation (P)
Conversion of a problem oriented language to intermediate language, assembly language, or directly to relocatable machine code.

transmission (R)
The electrical transfer of a signal, message, or other form of intelligence from one location to another.

transmit (R)
To transfer information to another location.

trap (R)
A special form of a conditional breakpoint that is activated by the hardware, by conditions imposed by the operating system, or both.

tree (R)
(1) A hierarchical data structure consisting of nodes and data elements.
(2) A connected graph without circuits.

trunk (R)
Same as bus.

TS (G)
Test Specification.

TTY (F)
Teletype, teletypewriter.

two-pass assembler (R)
An assembler that requires scanning of the source program twice. The first pass constructs a symbol table and the second does the translation.

U

ultraprecision crt display terminal (R)
This is a five inch random-position, point-plotting crt designed to meet the particular needs of those requiring a high degree of accuracy, stability, and resolution. It is especially suited for photographic recording of digital output data and for use in combination with a photomultiplier as a precision programmed spot scanner for the input of photographic data to digital computers.

ULTRA/16 Assembler (R)
Formerly the name associated with an assembler that accepted ULTRA/16 symbolic coding as an input and produced a relocatable machine-language object code for the AN/UYK-20 computer.

ULTRA/32 Assembler (R)
Formerly the name associated with an assembler that accepted ULTRA/32 symbolic coding as an input and produced a relocatable machine-language object code for the AN/UYK-7 computer.

unary operation (R)
Same as monadic operation.

unbundling (P)
Refers to partitioning the total cost of EDP systems; for example, separate prices for hardware and software instead of one price for both.

unconditional (R)
Subject to a specific instruction only, i.e., without any conditions.

unconditional branch (R)
An instruction that directs the deviation from the program execution sequence despite exisiting conditions.

unconditional jump (R)
See unconditional branch.

unitary operation (R)
Same as monadic operation.

universal keysets (F)
Digital data introducers which are general-purpose manually-operated, digital data entry devices. The use of appropriate keyboard overlays makes a universal keyset readily adjustable to a variety of input functions.

unpack (R)
To decompose packed information into a sequence of separate words or elements in order to recover the original data.

unsolvable (P)
A problem is unsolvable if it can be shown that no algorithm for solving the problem exists.

UPAK (O)
Utility Package.

update (F)
The process of entering newer information or of verifying present information contained in the computer.

update delivery (F)
The delivery of an update program.

update program (F)
The basic operational program with compiled program improvements and/or trouble corrections. All documentation is made to reflect the changes effected by the update program.

user console (F)
See data display consoles.

utility package (UPAK) (R)
Included within the utilities section of an executive system are diagnostic routines, program file-manipulation routines, file-utility routines, and cooperative routines for aiding the user in performing such functions as reading cards, printing line images on a printer, transferring files from device to device, and carrying out housekeeping functions required for file residence on mass-storage devices.

UYA-4 Display Console (C)
An operator console having a display with a plan Position Indicator (PPI) and alphanumeric character capability. In addition, the UYA-4 has operator controls called the action entry panel. Generally, the UYA-4 is used by an NTDS operator as a tracking console.

V

VAB (F)
Variable Action Button.

validation (N)
The act of confirming that design specifications and contractual commitments have been met and that operational capabilities of the ship/systems have been demonstrated to be satisfactory.

Variable Action Button (VAB) (R)
See Action Entry Button.

variable address (R)
An address modified by an index register or similar device during execution.

vector (P)
A set of elements which are physically adjacent in the computer storage. A vector is defined by its base address element size and length.

virtual addressing (P)
A logical addressing scheme in which a logical address is converted into a physical address; also, the ability to reference a memory location symbolically as a program without knowing its eventual physical storage location or medium.

virtual memory (R)
Same as virtual storage.

virtual storage (R)
(1) Originally, a hardware look-ahead or look-behind storage.
(2) In current usage, the term usually refers to a logical storage addressing scheme which frees the programmer from the size and field limitations of the physical core storage.
(3) Synonymous with virtual memory.

volatile memory (R)
Same as volatile storage.

W

warm start (P)
Bringing a computer system into operation from a state other than cold start.

weighting factor (R)
A number that multiplies a quantity so that the quantity will have its correct proportion of the net value of an accumulation.

X

XY plotter (R)
A device used in conjunction with a computer to plot coordinate points in the form of a graph.

Z

zone bit (R)
A bit other than the four used to represent the digits in a dense binary code.